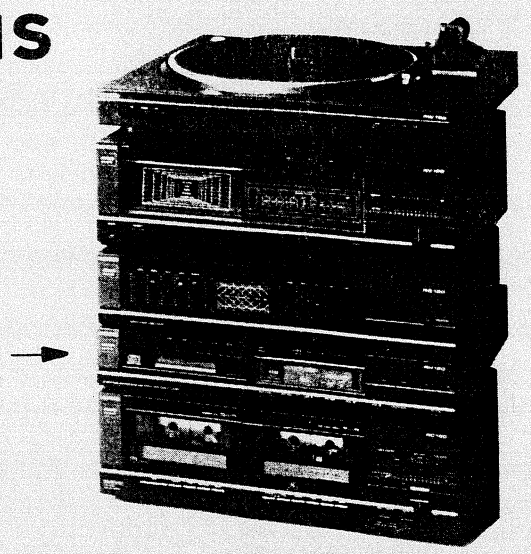
SIEMENS



Tuner/CD-Spieler RH 180
Tuner/CD-Player RH 180

Kundendienstschrift
Service manual

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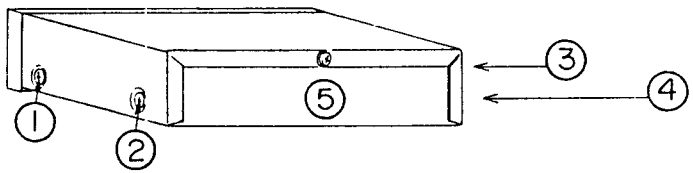
Ausgabe/Issue 724

Ident-Nr./order-no. 53 5192

Einbau - Ausbau/Assembly - Disassembly

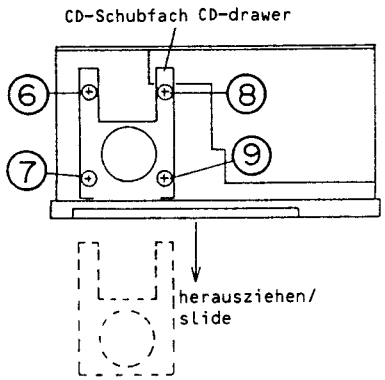
Gehäuseoberteil/Top lid

Vier Schrauben an den Seiten und eine Schraube an der Rückseite berücksichtigen/
Have regards to four screws at sides and one screw at rear view



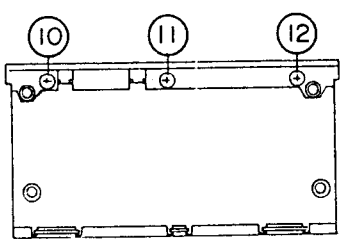
CD-Spielermechanik/CD-player mechanism

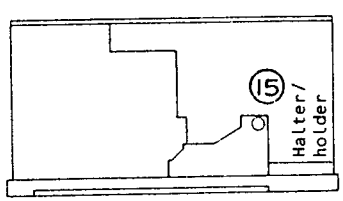
Das CD-Schubfach herausziehen (Ausbau); vier Schrauben bei der CD-Spielermechanik berücksichtigen/ Slide out disc drawer (disassembly); have regards to four screws holding the CD-mechanism

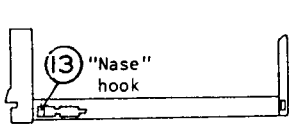


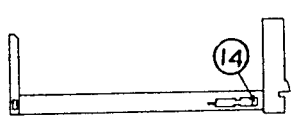
Gerätefront/Front panel assy

Drei Schrauben (10 ... 12) am Boden berücksichtigen; den Halter der Tuner-CD-Spieler platine bei der LCD-Anzeigeplatine berücksichtigen (15). Die zwei "Nasen" (13, 14) berücksichtigen/ Have regards to screws (10 ... 12) at bottom area; have regards to holder of tuner-CD-player p.c.b. that holds the LCD-p.c.b. Have regards to hooks 13,14



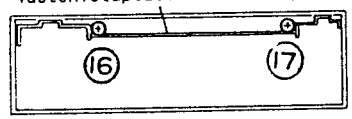






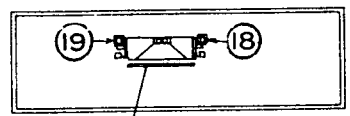
Tastenfeldplatine (Senderspeicherung)/Preset p.c.b.

Zwei Schrauben berücksichtigen/Have regards to two screws



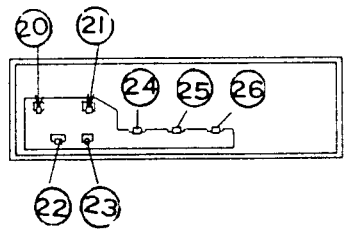
LCD-Anzeigenplatine mit Lampenplatine/LCD-p.c.b. with lamp p.c.b.

Die beiden Rastnasen am Frontteil berücksichtigen/Have regards to two hooks from panel



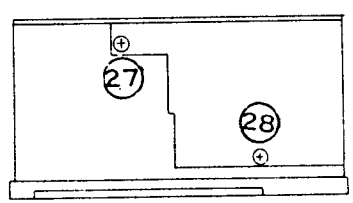
Tastenfeldplatine (CD-Spielerfunktionen)/CD key p.c.b.

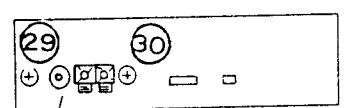
Sieben Rastnasen berücksichtigen/ Have regards to seven hooks



Tuner-/CD-Spielerplatine / Tuner-/CD-player p.c.b.

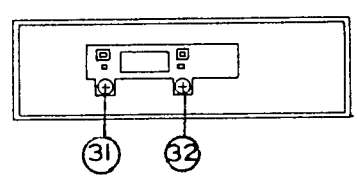
Zwei Schrauben für die Tuner-/CD-Spielerplatine und zwei Schrauben an der Geräterückseite berücksichtigen./ Have regards to two screws on tuner-/CD-player p.c.b. and screw on rear chassis.





Halterung für LCD-Anzeige/Panel bracket for LCD

Zwei Schrauben berücksichtigen/Have regards to two screws



ALLGEMEINE TECHNISCHE ANGABEN

Energieversorgung: 12 V_ vom RV 180

Tuner

Wellenbereiche:	UKW	87,5 ... 108 MHz
	MW	531 ... 1602 kHz
	LW	153 ... 360 kHz
Abstimmschritte:	UKW	50 kHz
	MW	9 kHz
	LW	1 kHz
Zwischenfrequenzen:	FM	10,7 ± 0,1 MHz
	AM	450 kHz
Empfindlichkeit:	UKW	< 20 uV (26 db, 40 kHz)
	MW	< 630 uV/m (20 db)
	LW	< 2500 uV/m (20 db)
Tennschärfe:	UKW	> 65 db (± 300 kHz)
	MW	> 25 db (± 9 kHz)
ZF-Unterdrückung:	UKW	> 60 db (90 MHz)
	MW	> 45 db (600 kHz)
	LW	> 50 db (255 kHz)
AM-Unterdrückung:	UKW	> 40 db
Spiegelfrequenz-unterdrückung:	UKW	> 60 db (106 MHz)
	MW	> 30 db (1404 kHz)
	LW	> 30 db (255 kHz)
Signal-Rauschabstand:	UKW	> 55 db
	MW	> 30 db
Klirrfaktor:	UKW	< 1 % (1100 uV/75 kHz)
	MW	< 3 %
Frequenzgang:	UKW	< 80 Hz ... > 12,5 kHz

CD-Spieler

Verwendete Test-DC:	Sony YEDS-7
Frequenzgang:	20 ... 20000 Hz (<|±3|db)
Klirrfaktor:	< 1 %
Signal-Rauschabstand:	> 60 db
Kanaltrennung:	> 30 db
Kanal-Balance:	<|± 2|db
Max. NF-Ausgangspegel:	1,6 V (CP13, Pin 5/7)

GENERAL TECHNICAL DATA

Power supply: 12 V_ from RV 180

Tuner

Ranges:	FM	87.5 ... 108 MHz
	MW	531 ... 1602 kHz
	LW	153 ... 360 kHz
Tuning steps:	FM	50 kHz
	MW	9 kHz
	LW	1 kHz
Intermediate frequencies:	FM	10.7 ± 0.1 MHz
	AM	450 kHz
Sensitivity:	FM	< 20 uV (26 db, 40 kHz)
	MW	< 620 uV/m (20 db)
	LW	< 2500 uV/m (20 db)
Selectivity:	FM	> 65 db (± 300 kHz)
	MW	> 25 db (± 9 kHz)
IF-Rejection:	FM	> 60 db (90 MHz)
	MW	> 45 db (600 kHz)
	LW	> 50 db (255 kHz)
AM-Supression:	FM	> 40 db
Image rejection:	FM	> 60 db (106 MHz)
	MW	> 30 db (1404 kHz)
	LW	> 30 db (255 kHz)
Signal-to-noise ratio:	FM	> 55 db
	MW	> 30 db
Distortion:	FM	< 1 % (1100 uV/75 kHz)
	MW	< 3 %
Frequency	FM	< 80 Hz ... > 12.5 kHz

CD-Player

Used test-DC:	Sony YEDS-7
Frequency response:	20 ... 20000 Hz (<|±3|db)
Distortion:	< 1 %
Signal-to-noise ratio:	> 60 db
Channel separation:	> 30 db
Channel balance:	<|± 2|db
Max. AF-level:	1.6 V (CP13, Pin 5/7)

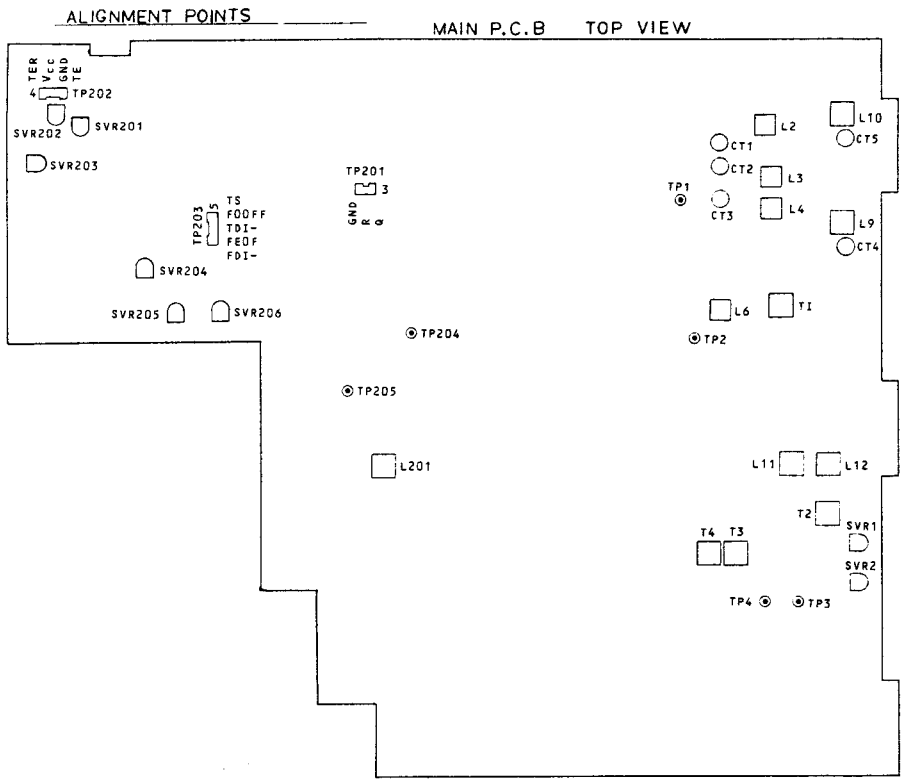
Tunerabgleich RH 180

Schritt	Funktion	Vorbereitung	Signaleingang	Einstell-element	Meßwert
1.	UKW-Diskriminator	Abgleichsender (75 Ohm) an die Antennenbuchse anschließen. Voltmeter (10 M) an TP3 und TP4 anschließen. Das Klirrfaktormeßgerät parallel zum Lautsprecher anschließen. RH 180-Display auf 98 MHz stellen.	98 MHz/40 kHz/1 kHz/16 µV	T3 T4	< 20 mV < 0,5 % (K 3)
2.	UKW-Eckfrequenzen	Digitalvoltmeter (10 M) an TP2 und Masse anschließen. RH 180-Display auf 87,5 MHz stellen.	-	L6	1,4 V_
3.	UKW-Vorselektion	Den Abgleichsender an die Antennenbuchse anschließen. Das Voltmeter (10 M) parallel zum Lautsprecher anschließen.			
		RH 180-Display auf 90 MHz stellen.	90 MHz/40 kHz/1 kHz/1 µV	L2/L3/L4	Max. 1 kHz-Pegel
		RH 180-Display auf 106 MHz stellen.	106 MHz/40 kHz/1 kHz/1 µV	CT1/CT2/CT3	Max. 1 kHz-Pegel
		RH 180-Display auf 98 MHz stellen.	98 MHz/40 kHz/1 kHz/1 µV	T1	Max. 1 kHz-Pegel
4.	Schritte 1, 2 und 3 nochmals wiederholen.				
5.	FM-Stummschaltpegel	RH 180-Display auf 98 MHz stellen. Den Monoschalter ausschalten.	98 MHz/40 kHz/1 kHz/10 µV	SVR2	Stummschaltung aus
6.	AM-ZF (MW)	Abgleichsender an die Antennenbuchse anschließen. RH 180-Display auf 531 kHz stellen.	450 kHz/30 %/400 Hz	T2	Max. 400 Hz-Pegel
7.	MW-Eckfrequenzen	RH 180-Display auf 531 kHz stellen. Digitalvoltmeter (10 M) an TP2 und Masse anschließen.	-	L11	1,2 V_
8.	MW-Vorselektion Abgleich mehrmals wiederholen	RH 180-Display auf 603 kHz stellen.	603 kHz/30 %/400 Hz	L9	Max. 400 Hz-Pegel
		RH 180-Display auf 1404 kHz stellen.	1404 kHz/30 %/400 Hz	CT4	Max. 400 Hz-Pegel
9.	LW-Eckfrequenzen	RH 180-Display auf 153 kHz stellen.	-	L12	1,5 V_
10.	LW-Vorselektion Abgleich mehrmals wiederholen	RH 180-Display auf 153 kHz stellen.	153 kHz/30 %/400 Hz	L10	Max. 400 Hz-Pegel
		RH 180-Display auf 360 kHz stellen.	360 kHz/30 %/400 Hz	CT5	Max. 400 Hz-Pegel
11.	AM-Signalmeter (Feldstärke, MW)	RH 180-Display auf 999 kHz stellen.	999 kHz/30 %/400 Hz/32 µV	SVR1	Die 5. LED soll gerade zu leuchten beginnen.

Tuneralignment RH 180

Step	Function	Preparation	Signal input	Adjusting element	Indicated value
1.	UKW-Discriminator	Connect RF-generator (75 Ohm) to antenna socket. Connect voltmeter (10 M) to TP3 and TP4. Connect distortion-meter across speakers. Set RH 180-Display to 98MHz.	98 MHz/40 kHz/1 kHz/16 µV	T3 T4	< 20 mV < 0.5 % (K 3)
2.	UKW-Corner-frequencies	Connect digitalvoltmeter (10 M) to TP2 and ground. Set RH 180-display to 87,5 MHz.	-	L6	1.4 V_
3.	UKW-Tracking	Connect RF-generator to antenna socket. Connect voltmeter (10 M) across speaker.			
		Set RH 180-display to 90 MHz.	90 MHz/40 kHz/1 kHz/1 µV	L2/L3/L4	Max. 1 kHz-level
		Set RH 180-display to 106 MHz.	106 MHz/40 kHz/1 kHz/1 µV	CT1/CT2/CT3	Max. 1 kHz-level
		Set RH 180-display to 98 MHz.	98 MHz/40 kHz/1 kHz/1 µV	T1	Max. 1 kHz-level
4.	Repeat step 1, 2 and 3 again				
5.	FM-Muting level	Set RH 180-display to 98 MHz. Switch mono switch to off.	98 MHz/40 kHz/1 kHz/10 µV	SVR2	Muting off
6.	AM-ZF (MW)	Connect RF-generator to antenna socket. Set RH 180-display to 531 kHz.	450 kHz/30 %/400 Hz	T2	Max. 400 Hz-level
7.	MW-Corner-frequencies	Set RH 180-display to 531 kHz. Set digitalvoltmeter (10 M) to TP2 and ground.	-	L11	1.2 V_
8.	MW-Tracking Repeat adjustment several times	Set RH 180-display to 603 kHz. Set RH 180-display to 1404 kHz.	603 kHz/30 %/400 Hz 1404 kHz/30 %/400 Hz	L9 CT4	Max. 400 Hz-level Max. 400 Hz-level
9.	LW-Corner-frequencies	Set RH 180-display to 153 kHz.	-	L12	1.5 V_
10.	LW-Tracking Repeat adjustment several times	Set RH 180-display to 153 kHz. Set RH 180-display to 360 kHz.	153 kHz/30 %/400 Hz 360 kHz/30 %/400 Hz	L10 CT5	Max. 400 Hz-level Max. 400 Hz-level
11.	AM-Signalmeter	Set RH 180-display to 999 kHz.	999 kHz/30 %/400 Hz/32 µV	SVR1	The 5th LED should start lightening

Einstellpunkte / Location points



MESSMITTELAUSRÜSTUNG FÜR CD-SPIELER RH 180

Für den Abgleich des CD-Spielers im RH 180 ist die folgende Meßmittelausrüstung notwendig.

1. Zweikanaloszilloskop mit Y-Bandbreite > 50 MHz
   und Gesamtbeschleunigungsspannung > 8 kV

   Empfehlung: 1) 60 MHz-Oszilloskop HM 605
   Hameg K. Hartmann KG
   Kelsterbacher Str. 15 - 19
   6000 Frankfurt/Main 71
   Telefon: (06 11) 67 60 17
   Telex: 04 13 866

   2) 50 MHz-Oszilloskop Oscillar D 1004
   Siemens AG - RVE 6 M
   Richard-Strauß-Str. 76
   8000 München 80
   Telefon: (8 89) 92 21-45 28
   Telefax: (0 89) 92 21-44 99
   Telex: 5 29 421-25

2. Digitalvoltmeter mit Innenwiderstand von 10 MOhm

   Empfehlung: Metravo 5 D von BBC
   Goerz-Metrawatt
   Landwehrstr. 35
   8000 München 2
   Telefon: (0 89) 52 22 19/59 12 76
   Telex: 05 29 181

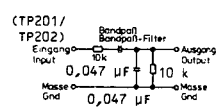
3. NF-Generator

4. Meß-CD

   1) Demonstrations-CD, SJ 1 oder Sony YEDS-7
   Firma Spitzer Mileger
   Steinengraben 40
   CH-4001 Basel/Schweiz
   Telefon: (00 41/61 23) 45 60
   Telex: 6 2 737

5. Bandpaßfilter

   Bitte selber anfertigen.



MEASUREMENT EQUIPMENT FOR CD-PLAYER RH 180

For alignment of CD-players inside of RH 180 the following measurement equipment is necessary.

1. Oscilloscope with two channel, Y-band width > 50 MHz
   and accelerating potential > 8 kV

   Recomendation: 1) 60 MHz oscilloscope HM 605
   Hameg K. Hartmann KG
   Kelsterbacher Str. 15 - 19
   6000 Frankfurt/Main 71
   Telefon: (06 11) 67 60 17
   Telex: 04 13 866

   2) 50 MHz oscilloscope Oscillar D 1004
   Siemens AG - RVE 6 M
   Richard-Strauß-Str. 76
   8000 München 80
   Telefon: (0 89) 92 21-45 28
   Telefax: (0 89) 92 21-45 99
   Telex: 5 29 421-25

2. Digitalvoltmeter with impedance of 10 MOhm

   Recommendation: Metravo 5 D of BBC
   Goerz-Metrawatt
   Landwehrstr. 35
   8000 München 2
   Telefon: (0 89) 59 22 19/59 12 76
   Telex: 05 29 181

3. AF-Audiogenerator

4. Test-CD

   1) Demo-CD, SJ 1 or Sony YEDS-7
   firm Spitzer Mileger
   Steinengraben 40
   CH-4001 Basel/Schweiz
   Telefon: (00 41/61 23) 45 60
   Telex: 6 2 737

5. Bandpassfilter

   Please produce by one self.

REINIGUNGSMITTEL FÜR DIE BEWEGLICHE OBJEKTIV-LINSE

1. Druckluft aus Druckluftdose, erhältlich im Optik-Optikfachhandel. (Empfehlung: Druckluftdose 5929 von Hamaphot KG, Hanke & Thomas)
2. Wattestäbchen
3. Isopropylalkohol

CLEANING EQUIPMENT FOR OSCILLATING LENSE OF PICK-UP

1. Compressed air from can, available in optic trade. (Recommendation: Compressed-air can 5929 from Hamaphot KG, Hanke & Thomas)
2. Cotton swabs
3. Iso-propyl-alcohol

SICHTBARMACHUNG DES LASERSTRAHLES

Checkkarte mit fluoreszierendem Fenster.
Besondere Empfindlichkeit bei 700 ... 800 mm.
Es erfolgt eine Transformation der Strahlung in den sichtbaren Bereich. Zur Sichtbarmachung der Infrarotstrahlung bei CD-spielern und IR-Fernbedienungsgebern geeignet.

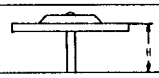
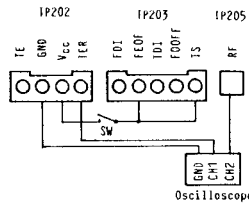
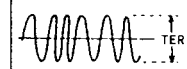
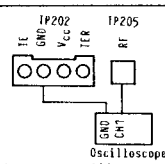
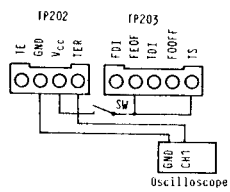
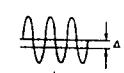
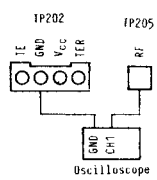
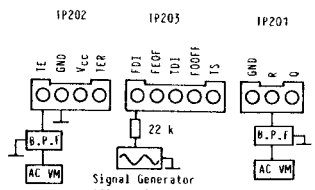
Laser 2000 Gmbh
Edelsbergstr. 10
8000 München 21
Telefon: (0 89) 57 50 97
Telex: 5 28 116

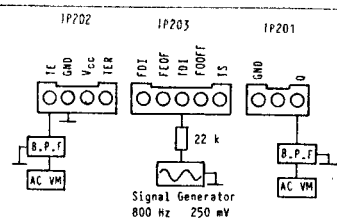
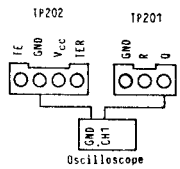
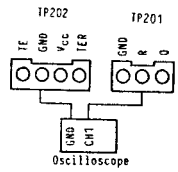
VISIBILITY OF LASER BEAM

Cheque card with fluoresce window.
Special sensitivity from 700 ... 800 mm.
There is beam-transformation to visible range. For infrared-radiation-visibility of CD-player-pick-ups and IR-transmitters.

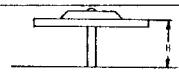
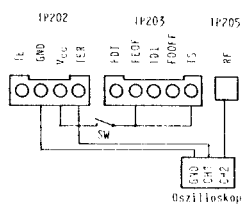
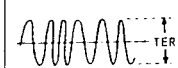
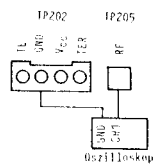
Laser 2000 GmbH
Edelsbergstr. 10
8000 München 21
Telefon: (0 89) 57 50 97
Telex: 5 28 116

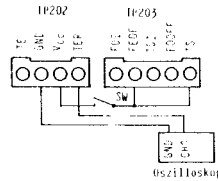
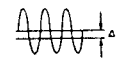
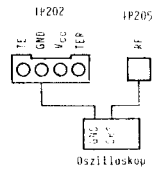
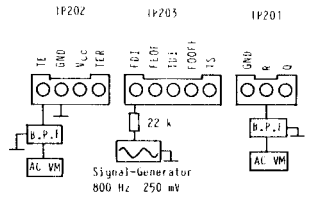
Alignment of CD-player in RH 180-set

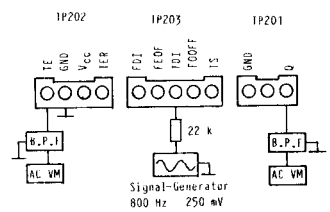
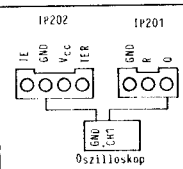
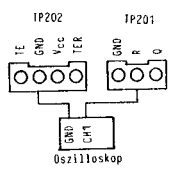
Step	Function	Preparation	Signalinput	Adjusting element	Indicated value
1.	Turntable hight				H = 11.5 mm ± 0.1 mm
2.	PLL-VCO Turntable speed	Connect frequency counter to TP 204 and ground. Set in the stop mode.	-	L201	4.3322 MHz ± 10 kHz
3.	Diffraction grating	 Connect oscilloscope to TP 202 and ground. Connect TS (TP 203) and FEOF (TP 203) to V_{CC} (TP 202). Play the test-CD SJ1. Cheque the HF-signal at TP 205 (eye pattern).	-	Diffraction grating groove *	 TER > 300 mV_{ss}
4.	Min. jitter of HF-level Max. vertical position of laser beam	 Connect oscilloscope to RF (TP 205) and ground (TP 202). Play the test-CD SJ1.		Azimuthscrew (Base adjusting screw) **	 The eye pattern lines maybe thin and clear.
5.	Fokus-Balance		-	SVR206	
6.	EF-Balance Trackingbalance	 Connect oscilloscope to TER (TP 202) and GND (TP 202). Play the test-CD SJ1. Perform measure connection from TS (TP 203) and V_{CC} (TP202). Perform measure connection from FEOF (TP 203) to V_{CC} (TP 202).	-	SVR203	 $\Delta E_S \pm 15$ mV
7.	Level of RF-signal/ Eye pattern	 Connect oscilloscope to RF (TP 205) and GND (TP 202). Play the test-CD SJ1.			T-Signals: 4 V_{ss} ... 5 V_{ss}
8.	Focus gain	 Connect AF-generator via 22 k -resistor from FDI (TP 203) to GND (TP 202). Connect voltmeter (10 M) via band pass filter to TE (TP 202). Connect voltmeter (10 M) via band pass filter to R (TP 201). Play test-CD SJ1.	800 Hz sine 250 mV_{eff}	SVR204	$U_R = 3.55\ U_{TE}$

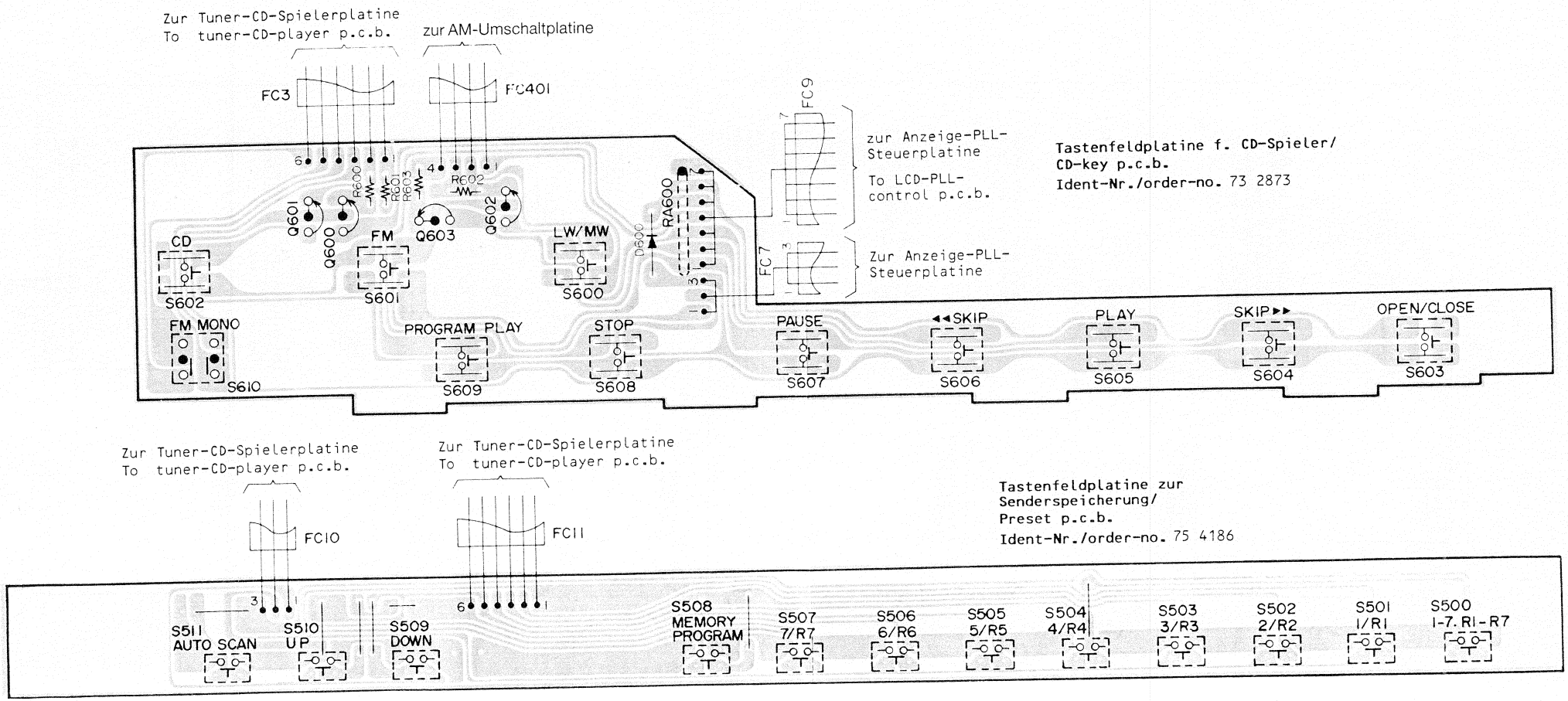
9.	Tracking gain	 Connect AF-generator via 22 kΩ-resistor to TDI (TP 203) and GND (TP 202). Connect voltmeter (10 M) via band pass filter to TE (TP 202). Connect voltmeter (10 M) via band pass filter to Q (TP 201) Play the test-CD SJ1.	800 Hz sine 250 $mV_{v.m.s.}$	SVR201	U_{TE} = 8.9 U_Q
10.	Tracking-offset	 Connect oscilloscope to Q (TP 201) and GND (TP 202). Set to stop-mode.	-	SVR202	± 10 mV_
11.	Focus-offset	 Connect oscilloscope to R (TP 201) and GND (TP 202). Set to stop-mode.		SVR205	± 10 mV_

Abgleich CD-Spieler im RH 180

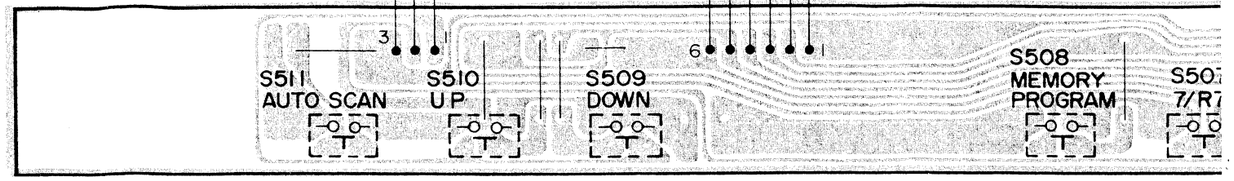
Schritt	Funktion	Vorbereitung	Signaleingang	Einstellelement	Meßwert
1.	Höhe des Plattentellers				H = 11,5 mm ± 0,1 mm
2.	PLL-VCO Plattenteller-drehzahl	Den Frequenzzähler an TP 204 und Masse anschließen. In die Stop-Funktion bringen.	-	L201	4,3322 MHz ± 10 kHz
3.	Beugungsgitter	 Das Oszilloskop an Testpunkt TP 202 TER und GND anschließen. TS (TP 203) und FEOF (TP 203) an V_{CC} (TP 202) anschließen. Die Test-CD SJ1 abspielen. An RF (TP 205) soll das Trapezmuster-signal vorhanden sein.	-	Gittereinstellschraube *	 TER > 300 mV_{ss}
4.	Jitterminimum des HF-Signales/Senkrecht-stellung des Abtast-strahles auf der "Compact disc"	 Das Oszilloskop an RF (TP 205) und GND (TP 202) anschließen. Die Test-CD SJ1 abspielen.		Azimutschraube (Basiseinstellschraube) **	 Die Begrenzungslinien des Trapezmusters sollen mög-lichst scharf sein.
5.	Fokus-Balance		-	SVR206	

6.	Ef-Balance Spurbalance	 Das Oszilloskop an TER (TP 202) und GND (TP 202) anschließen. Die Test-CD SJ1 abspielen. Verbindung zwischen TS (TP 203) und V_{CC} (TP202) herstellen. Verbindung zwischen FEOF (TP 203) und V_{CC} (TP 202) herstellen.	-	SVR203	 $\Delta E \leq \pm 15$ mV
7.	Überprüfung des HF-Pegels	 Das Oszilloskop an RF (TP 205) und GND (TP 202) anschließen. Die Test-CD SJ1 abspielen.			T-Signale: 4 V_{ss} ... 5 V_{ss}
8.	Fokusfehlersignal-verstärkung	 Den NF-Generator über 22 k -Widerstand an FDI (TP 203) und GND (TP 202) an-GND (TP 202) anschließen. Ein Voltmeter (10 M) über Bandpaßfilter an TE (TP 202) anschließen. Ein Voltmeter (10 M) über Bandpaßfilter an R (TP 201) anschließen. Die Test-CD SJ1 abspielen.	800 Hz Sinus 250 mV_{eff}	SVR204	$U_R = 3{,}55\ U_{TE}$ (+ 11 db)

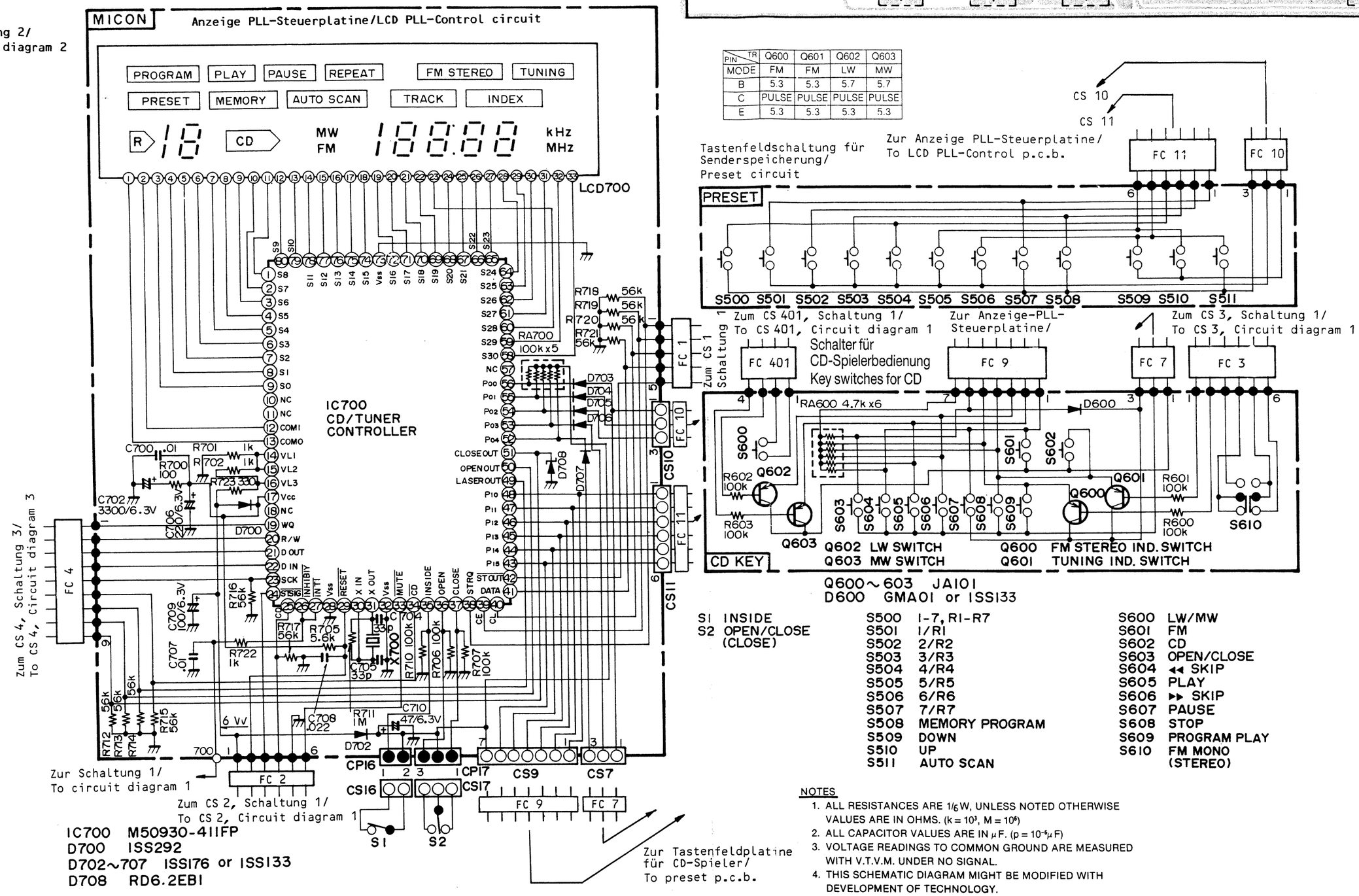
9.	Spurfehlersignal-verstärkung	 Den NF-Generator über 22 kΩ-Widerstand an TDI (TP 203) und GND (TP 202) anschließen. Ein Voltmeter (10 M) über das Bandpaßfilter an TE (TP 202) anschließen. Ein Voltmeter (10 M) über das Bandpaßfilter an Q (TP 201) anschließen. Die Test-CD SJ1 abspielen.	800 Hz Sinus 250 mV_{eff}	SVR201	$U_{TE} = 8{,}9\ U_Q$
10.	Spur-Offset	 Das Oszilloskop an Q (TP 201) und GND (TP 202) anschließen. Gerät auf Stop-Funktion schalten.	-	SVR202	± 10 mV_
11.	Fokus-Offset	 Das Oszilloskop an R (TP 201) und GND (TP 202) anschließen. Gerät auf Stop-Funktion schalten.		SVR205	± 10 mV_


Zur Tuner-CD-Spielerplatine
To tuner-CD-player p.c.b.
zur AM-Umschaltplatine
FC3
FC401
FC9
zur Anzeige-PLL-Steuerplatine
To LCD-PLL-control p.c.b.
Zur Anzeige-PLL-Steuerplatine
FC7
Tastenfeldplatine f. CD-Spieler/
CD-key p.c.b.
Ident-Nr./order-no. 73 2873
R600
R601
R603
R602
Q601
Q600
Q603
Q602
RA600
D600
CD
S602
FM
S601
LW/MW
S600
FM MONO
S610
PROGRAM PLAY
S609
STOP
S608
PAUSE
S607
◄◄SKIP
S606
PLAY
S605
SKIP►►
S604
OPEN/CLOSE
S603
Zur Tuner-CD-Spielerplatine
To tuner-CD-player p.c.b.
Zur Tuner-CD-Spielerplatine
To tuner-CD-player p.c.b.
FC10
FC11
Tastenfeldplatine zur
Senderspeicherung/
Preset p.c.b.
Ident-Nr./order-no. 75 4186
S511
AUTO SCAN
S510
UP
S509
DOWN
S508
MEMORY
PROGRAM
S507
7/R7
S506
6/R6
S505
5/R5
S504
4/R4
S503
3/R3
S502
2/R2
S501
1/R1
S500
1-7, R1-R7

Schaltung 2/
Circuit diagram 2



PIN \ TR	Q600	Q601	Q602	Q603
MODE	FM	FM	LW	MW
B	5.3	5.3	5.7	5.7
C	PULSE	PULSE	PULSE	PULSE
E	5.3	5.3	5.3	5.3



Q600~603 JA101
D600 GMA01 or ISS133

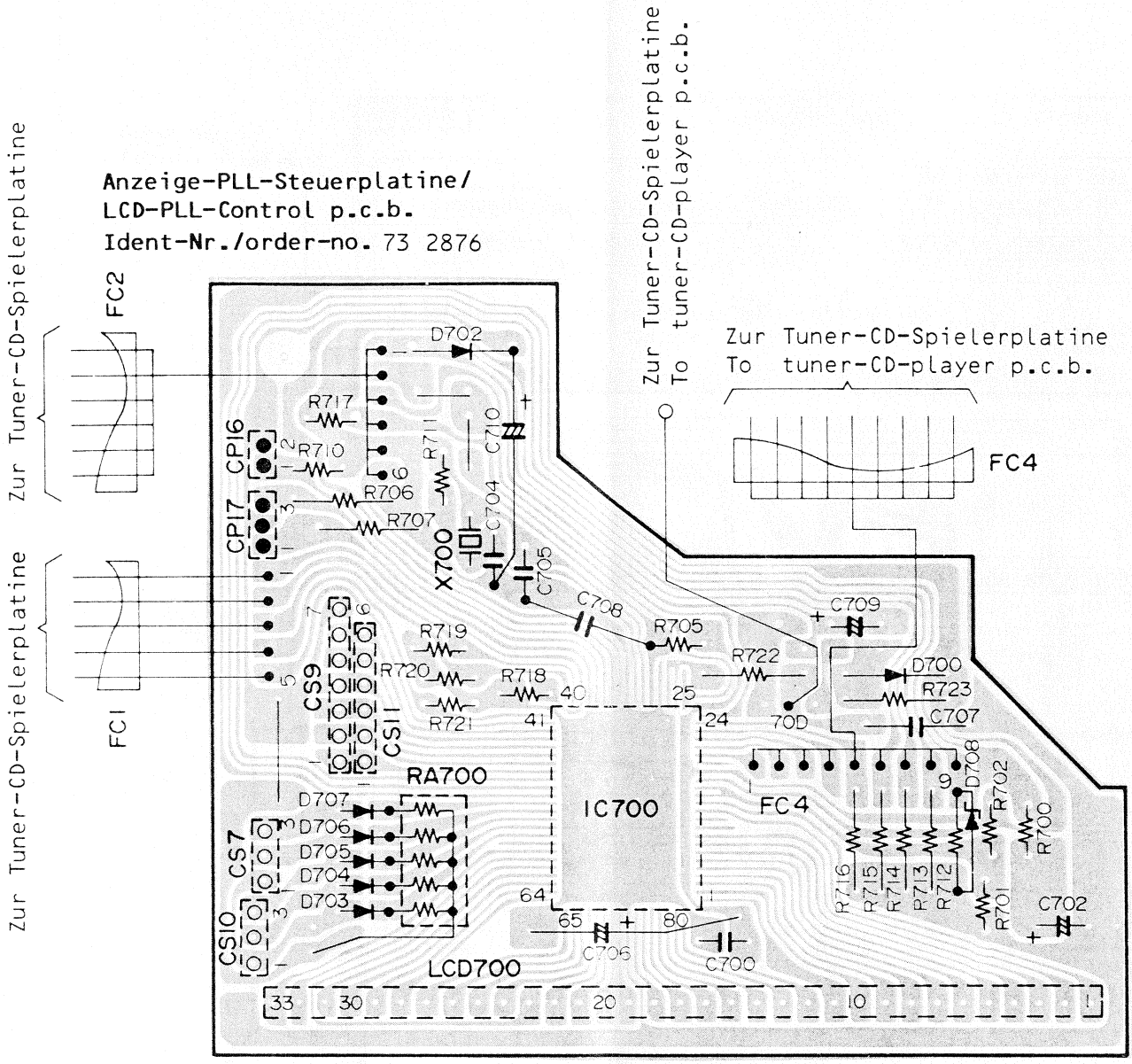
S1 INSIDE
S2 OPEN/CLOSE (CLOSE)

S500	1-7, R1-R7	S600	LW/MW
S501	1/R1	S601	FM
S502	2/R2	S602	CD
S503	3/R3	S603	OPEN/CLOSE
S504	4/R4	S604	◀◀ SKIP
S505	5/R5	S605	PLAY
S506	6/R6	S606	▶▶ SKIP
S507	7/R7	S607	PAUSE
S508	MEMORY PROGRAM	S608	STOP
S509	DOWN	S609	PROGRAM PLAY
S510	UP	S610	FM MONO (STEREO)
S511	AUTO SCAN		

IC700 M50930-411FP
D700 ISS292
D702~707 ISS176 or ISS133
D708 RD6.2EB1

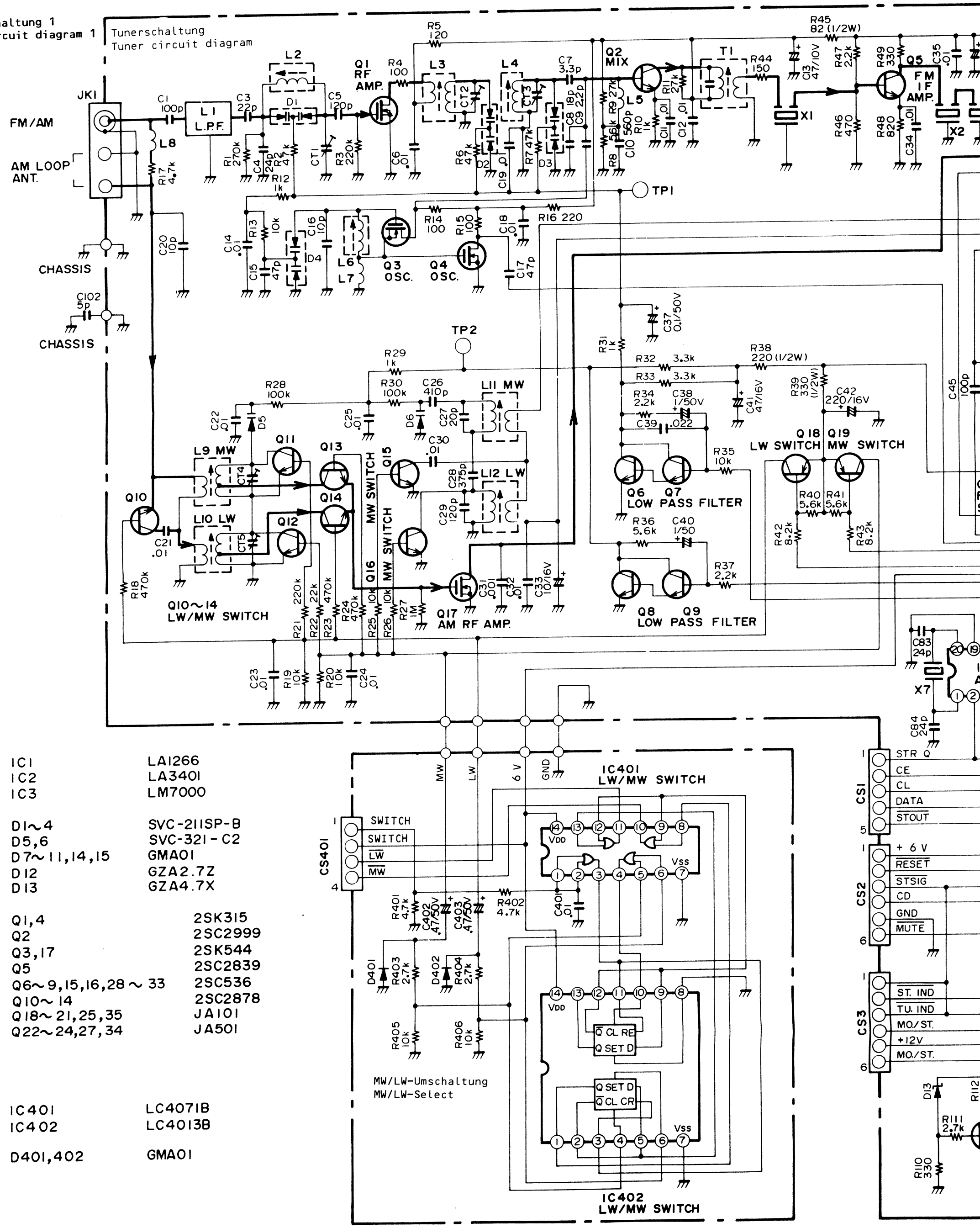
NOTES
1. ALL RESISTANCES ARE 1/6 W, UNLESS NOTED OTHERWISE VALUES ARE IN OHMS. (k = 10^3, M = 10^6)
2. ALL CAPACITOR VALUES ARE IN μF. (p = 10^{-6} μF)
3. VOLTAGE READINGS TO COMMON GROUND ARE MEASURED WITH V.T.V.M. UNDER NO SIGNAL.
4. THIS SCHEMATIC DIAGRAM MIGHT BE MODIFIED WITH DEVELOPMENT OF TECHNOLOGY.

IC \ PIN	FUNC	14	15	16	17	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	44	45	46	47	48	49	50	51
IC700	FM	2.6	2.6	5.2	5.0	1.6	0	1.6	4.6	4.6	5.4	0	5.2	5.2	0	5.0	2.3	2.4	0	0	4.8	5.4	0	5.4	0	0	5.0	5.0	5.0	5.4	5.4	5.4	5.4	5.4	5.4	0	0	0
	MW	2.6	2.6	5.2	5.0	1.6	0	1.6	4.6	4.6	5.4	0	5.2	5.2	0	5.0	2.3	2.4	0	0	4.8	5.4	0	5.4	0	0	5.0	0	5.0	5.4	5.4	5.4	5.4	5.4	5.4	0	0	0
	LW	2.6	2.6	5.2	5.0	1.6	0	1.6	4.6	4.6	5.4	0	5.2	5.2	0	5.0	2.3	2.4	0	0	4.8	5.4	0	5.4	0	0	5.0	0	5.0	5.4	5.4	5.4	5.4	5.4	5.4	0	0	0
	CD	2.6	2.6	5.2	5.0	0	0	1.6	5.1	5.1	5.4	4.8	5.2	5.2	0	5.0	2.3	2.4	0	0	0	5.4	0	5.4	0	0	5.0	0	5.0	5.4	5.4	5.4	5.4	5.4	5.4	0	0	0


Anzeige-PLL-Steuerplatine/
LCD-PLL-Control p.c.b.
Ident-Nr./order-no. 73 2876
Zur Tuner-CD-Spielerplatine
Zur Tuner-CD-Spielerplatine
To tuner-CD-player p.c.b.
Zur Tuner-CD-Spielerplatine
To tuner-CD-player p.c.b.
FC2
FC1
FC4
FC4
D702
R717
R710
R706
R707
R711
C710
C704
C705
X700
CP16
CP17
C708
R705
R719
R720
R721
R718
R722
C709
D700
R723
C707
CS9
CS11
RA700
D707
D706
D705
D704
D703
CS7
CS10
IC700
LCD700
C706
C700
D708
R702
R700
R716
R715
R714
R713
R712
R701
C702

Schaltung 1
Circuit diagram 1

Tunerschaltung
Tuner circuit diagram



IC1	LA1266
IC2	LA3401
IC3	LM7000
D1~4	SVC-211SP-B
D5,6	SVC-321-C2
D7~11,14,15	GMA01
D12	GZA2.7Z
D13	GZA4.7X
Q1,4	2SK315
Q2	2SC2999
Q3,17	2SK544
Q5	2SC2839
Q6~9,15,16,28~33	2SC536
Q10~14	2SC2878
Q18~21,25,35	JA101
Q22~24,27,34	JA501
IC401	LC4071B
IC402	LC4013B
D401,402	GMA01

PIN ~ TR	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q27	Q28	Q29
MODE	FM	FM	FM	FM	FM	FM	FM	LW/MW		LW	LW	MW	MW	LW	MW	MW	LW/MW	LW	MW	FM	LW/MW	ALL	CD	CD	ALL	LW/MW	TUNER	CD
B (G)	0	1.3	0	0	1.6	0.6	1.1	0.6	1.1	0.6	0.6	0.7	0.6	0.6	0.7	0.7	0	10.1	9.4	10.7	6.7	0	0.7	0	5.2	5.5	4.4	6.2
C (D)	6.5	7.6	4.5	4.5	8.7	3.9	3.9	4.5	4.5	0	0	0	0	0	0	0	4.8	10.8	10.1	11.4	7.3	5.0	0	9.9	0	0	11.5	11.5
E (S)	0	0.6	0	0	0.9	0	0.6	0	0.6	0	0	0	0	0	0	0	0	10.8	10.1	11.5	7.4	0	0	0	5.4	0	3.8	5.6

SVR1 AM AUTO STOP/TUNING LEVEL ADJ.
SVR2 FM MUTE/AUTO STOP/TUNING LEVEL ADJ.

R50 100 (1W)
Q5 FM IF AMP.
C35 .01
C36 10/16V
C34 .01
X2
X3
T2
X4
C51 .01
R56 470
C55 3.3/50V
SVR1 10k
C82 10/16V
C53 2.2/50V
R57 5.6k
C54 2.2/50V
R58 22
R59 22k
C56 .022
SVR2 100k
C52 .01
R55 1.5k
X5
R60 4.7k
C58 0.1/50V
C59 56p
C57 .01
TP3
TP4
IC1
AM/FM IF AMP. DETECTOR
C47 .01
C48 .01
R61 33k
R62 1k
L13 L.P.F.
C61 4.7/25V
C60 180p
C65 100/16V
X6
R63 5.6k
C66 3.3/50V
C67 .22/50V
R64 27k
C68 1/50V
C69 1/50V
IC2
FM MPX STEREO DEMODULATOR
C64 .047
C62 560p
C63 10/16V
R66 22k
C70 .022
R65 22k
C45 100p
C46 39p
R53 2.7k
T4 T3
R54 22k
C50 1/50V
C49 .01
Q21 AM SWITCH
C79 100/10V
C80 .01
C81 10/16V
R71 5.6k
R72 10k
R73 22
R74 120 (1W)
R75 150 (1W)
C73 1/50V NP
L14 L.P.F.
C77 .0033
R67 3.3k
R69 120k
C71 390p
C72 390p
R70 120k
R68 3.3k
C74 1/50V NP
L15 L.P.F.
C78 .0033
Q20 FM SWITCH
R51 5.6k
C101 33/16V
R52 10k
D7
D8
R91 10k
R92 10k
C85 100p
C86 100p
D9
C89 10/16V
C90 10/16V
C83 24p
X7
C84 24p
IC3
AM/FM PLL IC
C88 10/16V
C87 .01
R76 10k
R89 47
R90 47
R88 100k
Q28 AF SWITCH
Q29 AF SWITCH
R95 12k
R93 22k
R97 6.8k
R101 47k
C95 1/16V NP
R103 3.3k
C93 10/16V
R99 82k
Q30 AF SWITCH
Q31 AF SWITCH
R96 12k
R94 22k
R98 6.8k
R102 47k
C96 1/16V NP
R104 3.3k
C94 10/16V
R100 82k
R86 10
C97 47/6.3V
RESET DRIVE Q22
R117 5.6k
R77 100k
D11
C98 2.2/50V
R78 330
Q23 Q24 AF SWITCH
R87 5.6k
Q25 MUTE DRIVE
D12
R106 1.8k
Q32 MUTE
R107 1.8k
Q33 MUTE
R105 56
C99 1/50V
R80 10k
R108 10k
R79 10k
R118 5.6k
R85 8.2k
Q27 MUTE SWITCH
D13
R112 1k
D14
R115 220k
D15
R111 2.7k
R113 22k
R114 5.6k
Q34 RESET
Q35 RESET
R110 330
R116 5.6k

STR Q
CE
CL
DATA
STOUT
+ 6 V
RESET
STSIG
CD
GND
MUTE
ST. IND
TU. IND
MO./ST.
+12V
MO./ST.

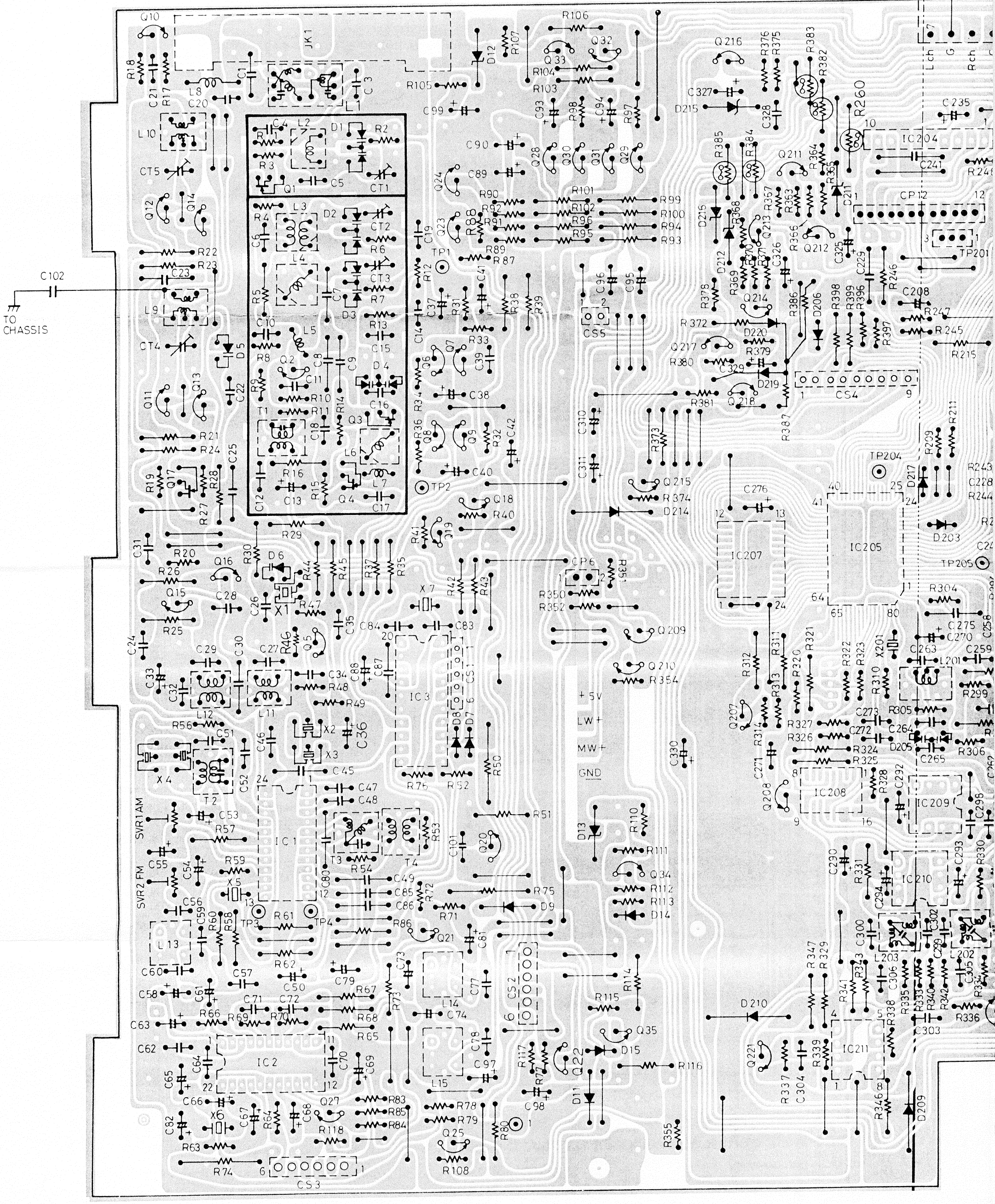
L-CH
R-CH
+ 6 V
+12V
L-CH
R-CH
MUTE

Zur Schaltung der CD-Spielerelektronik auf dem Schaltplan 3

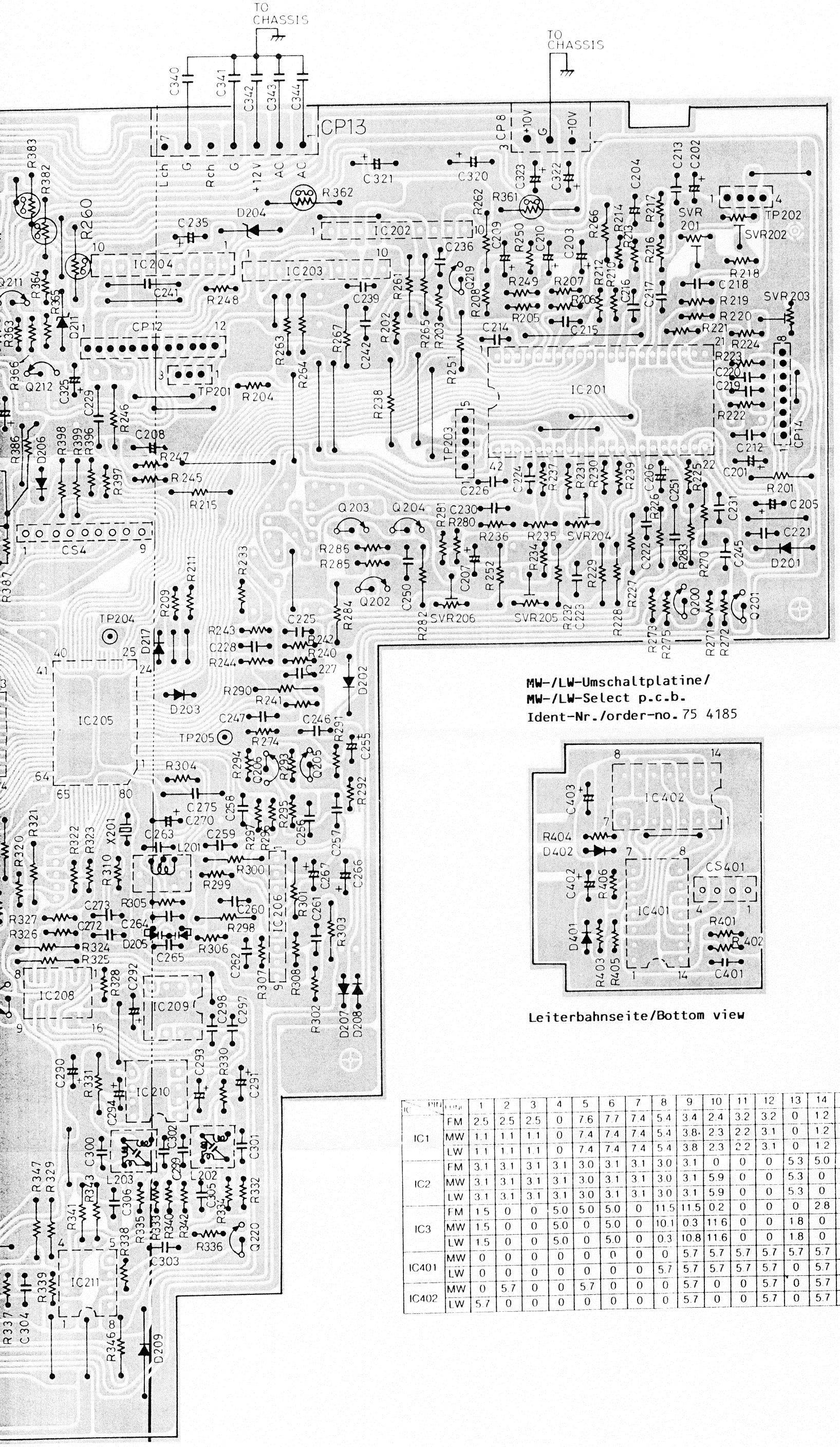
To circuit of CD-player of circuit diagram 3

Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35
FM/MW	TUNER	CD	TUNER	CD	ALL	ALL	ALL	ALL
6.5	4.4	6.2	4.4	6.2	0	0	0.7	4.5
0	11.5	11.5	11.5	11.5	0	0	0	5.5
0	3.8	5.6	3.8	5.6	0	0	0	5.2

Tuner-CD-Spieler-Platine/
Tuner-CD-Player-p.c.b.
Ident-Nr./order-no. 78 1775



Leiterbahnseite/Bottom view

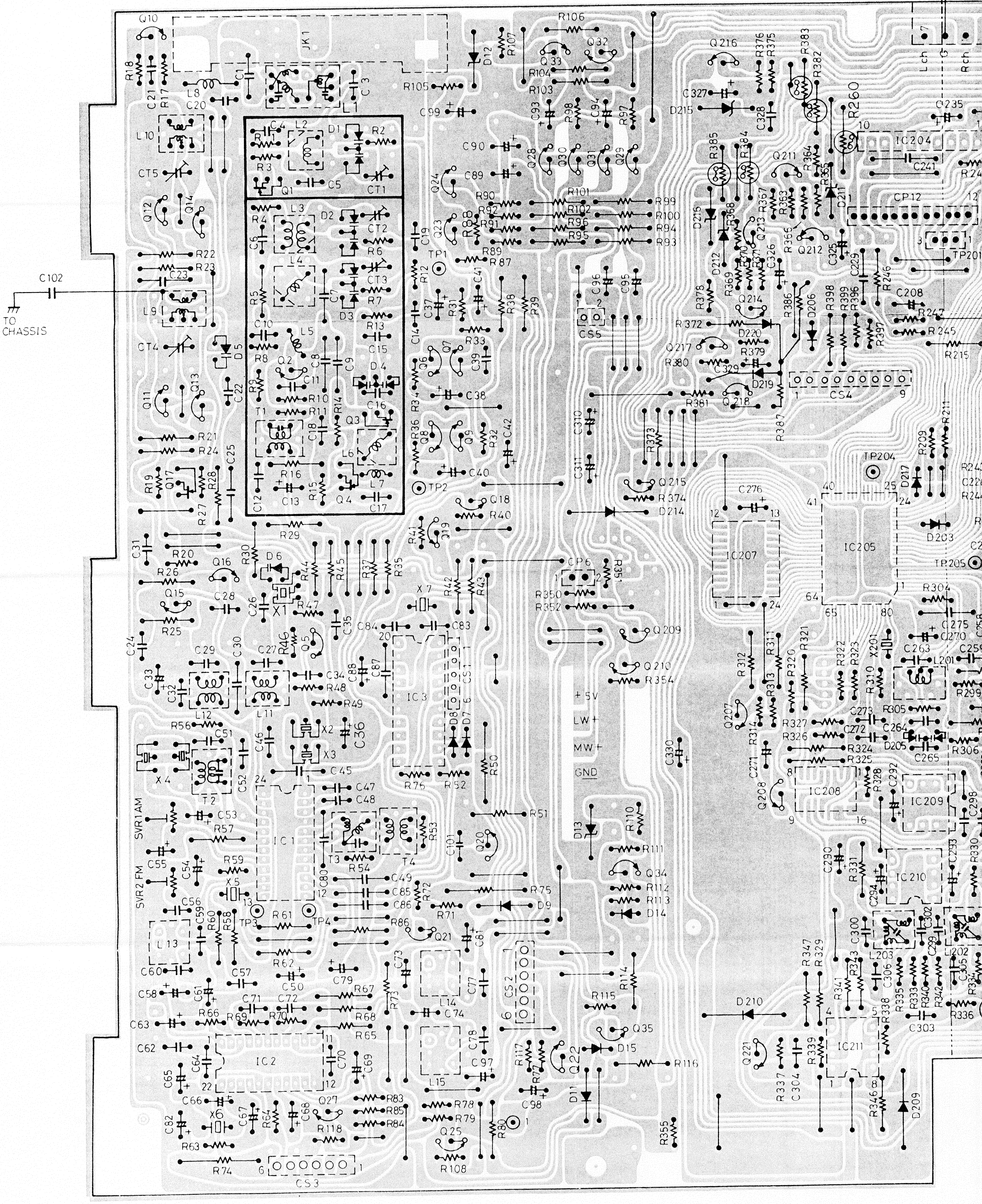


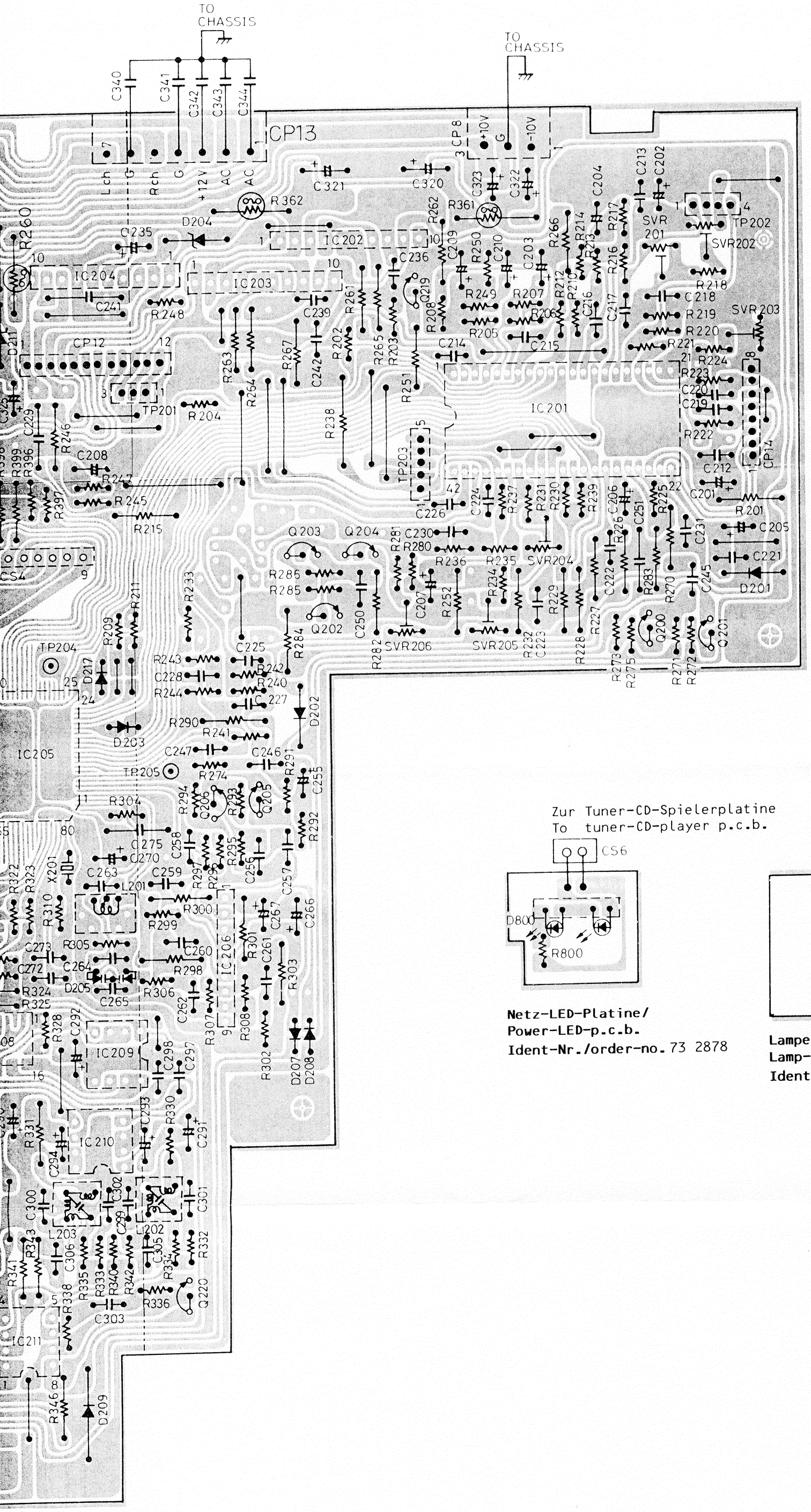
MW-/LW-Umschaltplatine/
MW-/LW-Select p.c.b.
Ident-Nr./order-no. 75 4185

Leiterbahnseite/Bottom view

IC	Pin	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
IC1	FM	2.5	2.5	2.5	0	7.6	7.7	7.4	5.4	3.4	2.4	3.2	3.2	0	1.2	1.5	0	0	2.5	1.5	0	4.0	4.0	4.0	3.4
	MW	1.1	1.1	1.1	0	7.4	7.4	7.4	5.4	3.8	2.3	2.2	3.1	0	1.2	1.4	0	0	1.1	1.4	7.2	3.6	3.6	3.6	2.2
	LW	1.1	1.1	1.1	0	7.4	7.4	7.4	5.4	3.8	2.3	2.2	3.1	0	1.2	1.4	0	0	1.1	1.4	7.2	3.6	3.6	3.6	2.2
IC2	FM	3.1	3.1	3.1	3.1	3.0	3.1	3.1	3.0	3.1	0	0	0	5.3	5.0	0	2.8	7.6	4.6	4.6	5.7	2.5	9.0		
	MW	3.1	3.1	3.1	3.1	3.0	3.1	3.1	3.0	3.1	5.9	0	0	5.3	0	0	2.8	8.2	4.9	4.9	6.2	2.5	9.2		
	LW	3.1	3.1	3.1	3.1	3.0	3.1	3.1	3.0	3.1	5.9	0	0	5.3	0	0	2.8	8.2	4.9	4.9	6.2	2.5	9.2		
IC3	FM	1.5	0	0	5.0	5.0	5.0	0	11.5	11.5	0.2	0	0	0	2.8	5.0	5.0	1.0	1.1	0	1.2				
	MW	1.5	0	0	5.0	0	5.0	0	10.1	0.3	11.6	0	0	1.8	0	5.0	5.0	1.0	1.1	0	1.2				
	LW	1.5	0	0	5.0	0	5.0	0	0.3	10.8	11.6	0	0	1.8	0	5.0	5.0	1.0	1.1	0	1.2				
IC401	MW	0	0	0	0	0	0	0	0	5.7	5.7	5.7	5.7	5.7	5.7										
	LW	0	0	0	0	0	0	0	5.7	5.7	5.7	5.7	5.7	0	5.7										
IC402	MW	0	5.7	0	0	5.7	0	0	0	5.7	0	0	5.7	0	5.7										
	LW	5.7	0	0	0	0	0	0	0	5.7	0	0	5.7	0	5.7										

Tuner-/CD-Spieler-Platine/
Tuner-/CD-player-p.c.b.
Ident-Nr./order-no. 78 1775

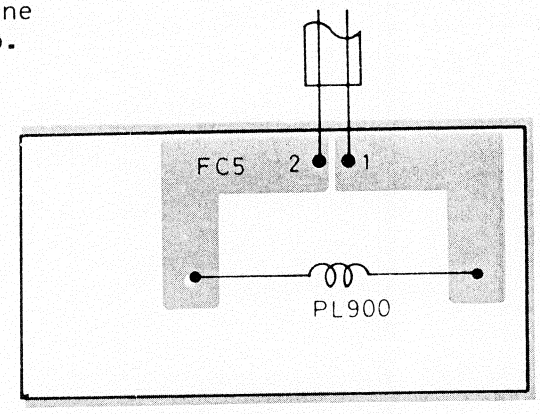




Zur Tuner-CD-Spielerplatine
To tuner-CD-player p.c.b.

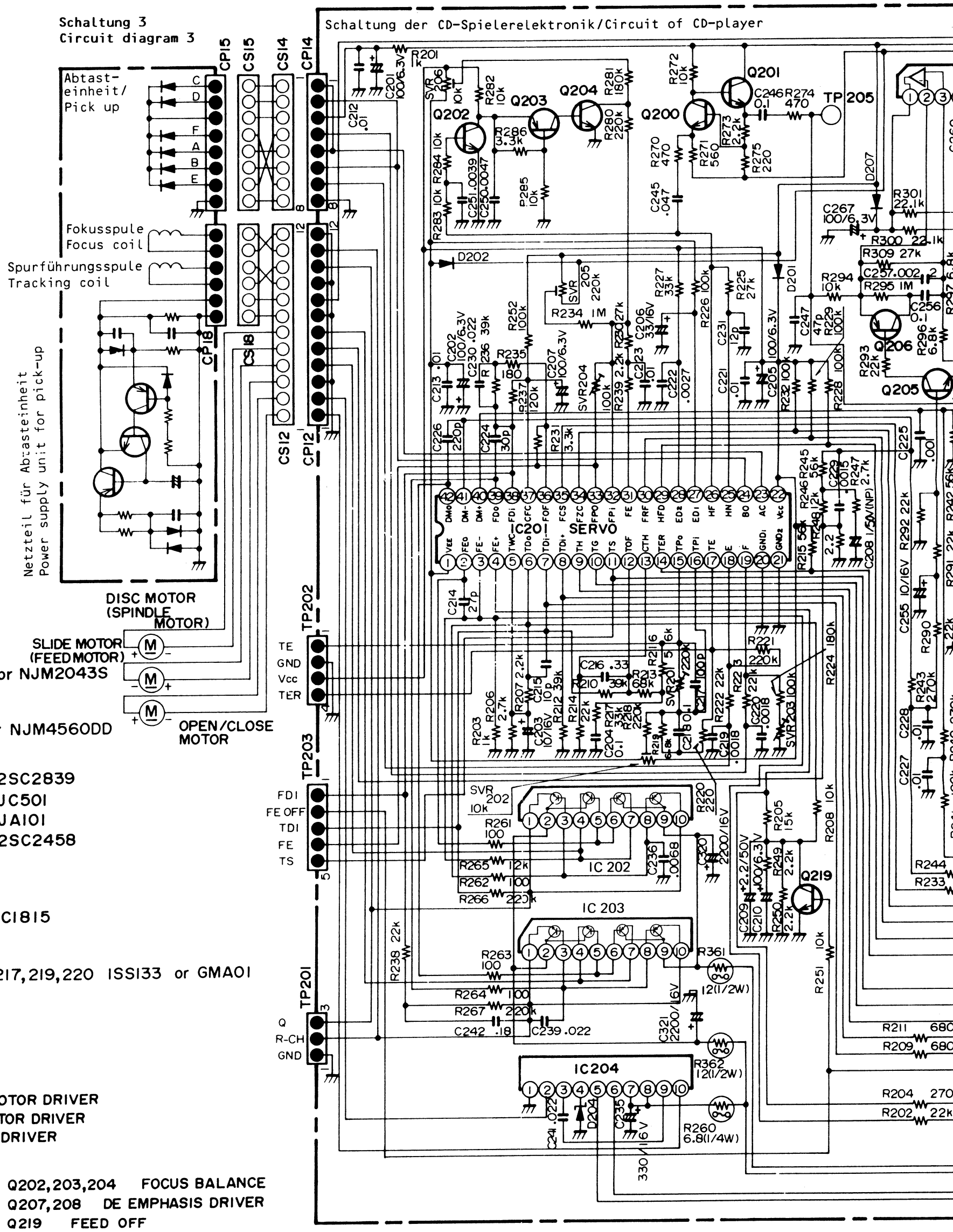
Netz-LED-Platine/
Power-LED-p.c.b.
Ident-Nr./order-no. 73 2878

Zur Tuner-CD-Spielerplatine
To tuner-CD-player p.c.b.



Lampenplatine (für LCD)/
Lamp-p.c.b. (for LCD)
Ident-Nr./order-no. 73 2879

Schaltung 3
Circuit diagram 3



IC201	XB087A0
IC202,203	STC451C
IC204	BA6109
IC205	YM-3805
IC206	μPC4570HA or NJM2043S
IC207	LC3517AM-15
IC208	YM-3015
IC209～211	μPC4570C or NJM4560DD

Q200,201	2SC930 or 2SC2839
Q202,204,207,209,210	JC501
Q203,206,208,212,214,215	JA101
Q205	2SC1815 or 2SC2458
Q211,213	2SB909
Q216	2SD1225
Q217	2SD1225
Q218	JC501 or 2SC1815
Q219,220,221	2SC2878

D201～203,206～210,214,217,219,220	1SS133 or GMA01
D205	SVC211
D211, 204	GZA5.6Y
D212,215,216	GZA6.8X
D800	SLP-171D

IC202	TRACK COIL SLIDE MOTOR DRIVER
IC203	FOCUS COIL DISC MOTOR DRIVER
IC204	OPEN/CLOSE MOTOR DRIVER
IC209,210	BUFFER AMP.

Q200,201	RF AMP.	Q202,203,204	FOCUS BALANCE
Q205,206	PLL CONTROL	Q207,208	DE EMPHASIS DRIVER
Q209,210	MUTE DRIVER	Q219	FEED OFF
Q211,213,216,217	REGULATOR	Q212,214,215,218	REGULATOR SWITCH
Q220,221	DE EMPHASIS SWITCH		

SVR201	TRACK GAIN ADJ.
SVR202	TRACK OFF SET ADJ.
SVR203	TRACK BALANCE ADJ.
SVR204	FOCUS GAIN ADJ.
SVR205	FOCUS OFF SET ADJ.
SVR206	FOCUS BALANCE ADJ.

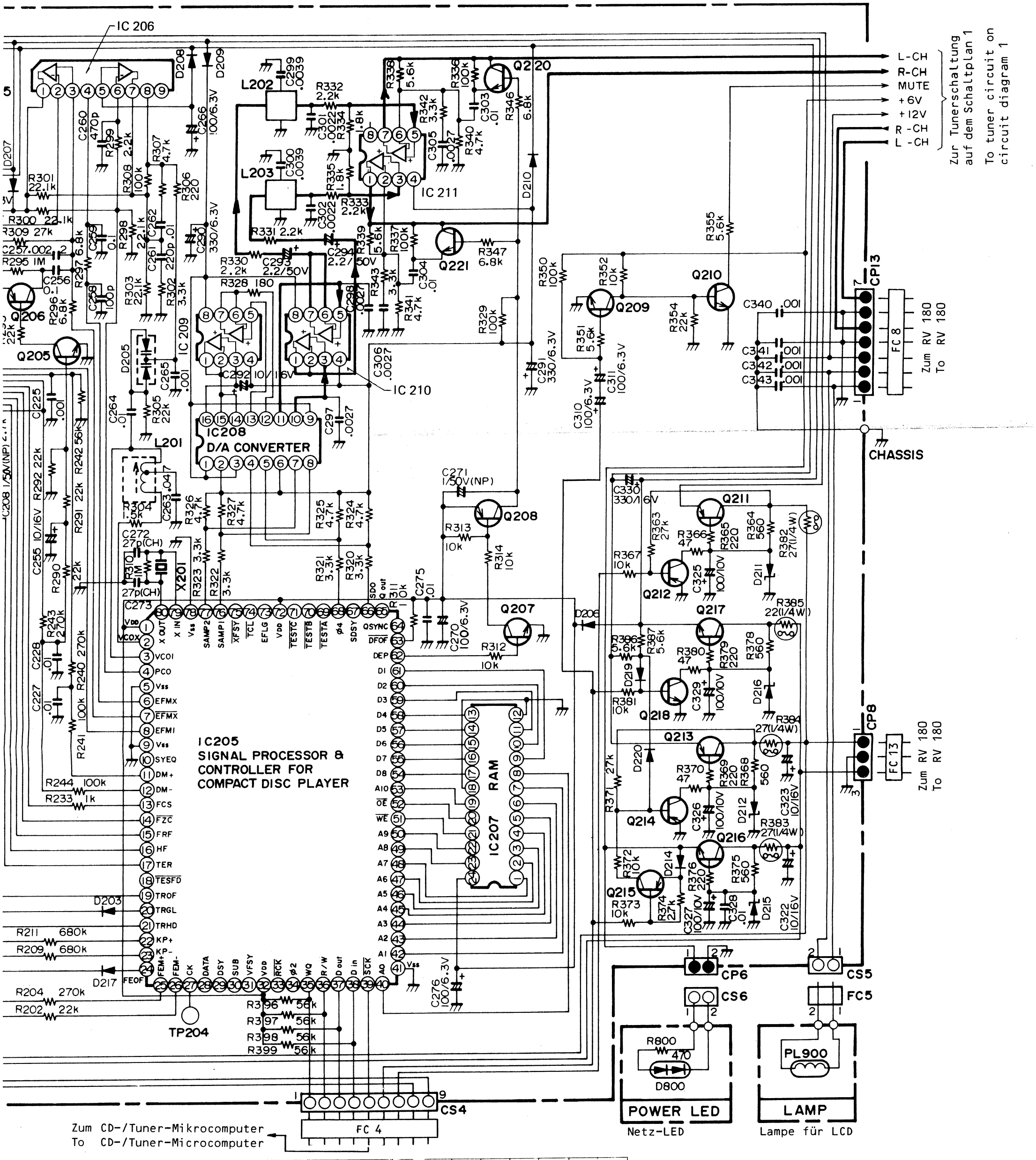
PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC202	0	13.1	0.6	0	-0.6	-0.6	0	0.6	-13.1	0						
IC203	0	13.1	0.6	0	-0.6	-0.6	0	0.6	-13.1	0						
IC204	0	0	0	0	0	0	13.0	13.0	0	0						
IC206	5.3	2.2	2.2	2.2	-5.3	2.7	2.7	2.7	5.3							
IC208	5.2	-5.3	5.2	—	—	-5.3	—	—	5.2	0	0	0	0	0	0	0
IC209	0	0	0	-5.3	0	0	0	5.3								
IC210	0	0	0	-5.3	0	0	0	5.3								
IC211	0	0	0	-5.3	0	0	0	5.3								

IC \ PIN	1	2	3	4	5
IC207	—	—	—	—	—

IC \ PIN	1	2	3	4	5	6	7
IC201	-5.2	-0.6	0	0	0.3	0.6	0

IC \ PIN	1	2	3	4	5	6	7
IC205	5.2	—	—	—	0	—	—
	41	42	43	44	45	46	47
	0	—	—	—	—	—	—

TR \ PIN	Q200	Q201	Q202	Q203	Q204	Q205	Q206	Q207	Q208	Q209	Q210	Q211		Q212		Q213		Q214		Q215	
	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	FM/MW/LW	CD	FM/MW/LW	CD	FM/MW/LW	CD	FM/MW/LW	CD	FM/MW/LW
B	-5.2	3.3	0	1.7	0.6	0	1.8	0.7	4.5	0.6	0	-0.6	-0.6	0	0	-6.6	0	0.8	-0.7	4.7	5.2
C	3.3	6.0	2.3	0.6	0	1.2	2.0	0	5.1	0	4.6	-13.0	-13.0	0	0	-11.7	-12.6	0	0	5.4	-0.7
E	0	2.6	0	2.3	0	0	2.2	0	5.2	0	0	0	0	0	0	-6.0	-0.6	0	0	5.4	5.6



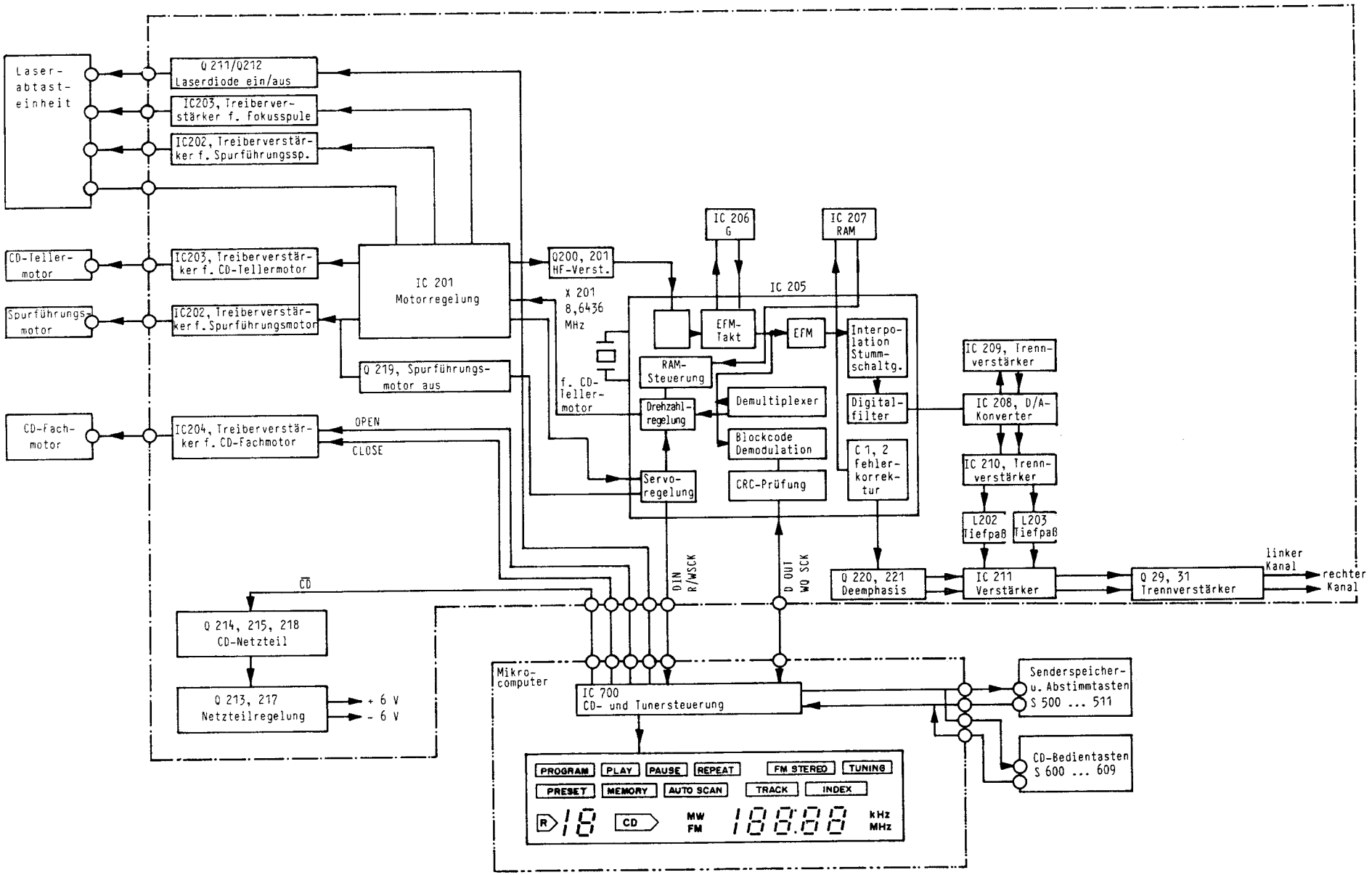
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	—	—	—	—	—	—	—	—	0	—	—	—	—	—	0	—	—	—	—	—	5.2

	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
	0	0.3	0.6	0	0	0	5.0	0.2	0	0	-0.5	0	0	0	0	0	0	0	5.2	0	0	0	0	-1.1	1.2	0	0	0	0	0	5.0	0	0	0	0	0.6	0	0	-0.6

	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	—	0	—	—	—	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.2	—	—	—	—	—	—	—	—
	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.2	—	—	—	—	—	0	—	—

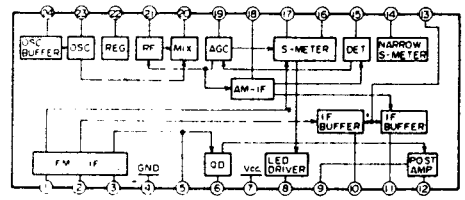
Q215		Q216		Q217		Q218		Q219	Q220	Q221
CD	FM/MW/LW	CD	FM/MW/LW	CD	FM/MW/LW	CD	FM/MW/LW	CD	CD	CD
4.7	5.2	6.6	6.6	6.6	1.1	0	0.7	0.7	0.7	0.7
5.4	-0.7	11.5	11.6	11.0	12.8	6.6	0	0	0	0
5.4	5.6	6.0	6.0	6.0	0.6	0	0	0	0	0

BLOCKSCHALTBILD ZUM CD-SPIELER RH 180

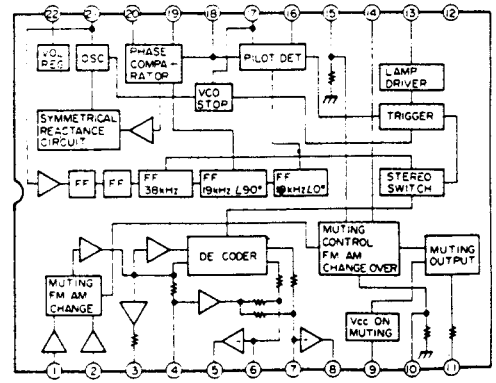


IC-Blockschaltbilder/IC-Block diagrams

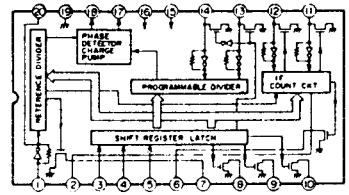
IC1, LA1266



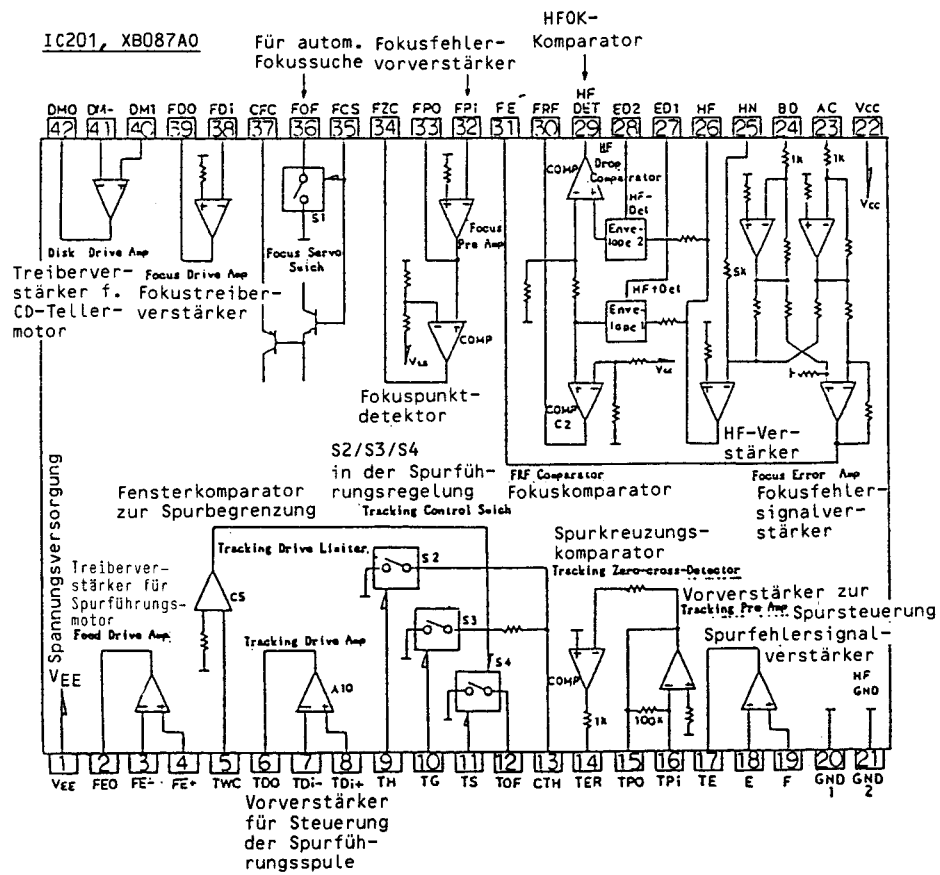
IC2, LA3401



IC3, LM7000, PLL, Programmierbarer Teil



IC201, XB087A0



IC 201, XB087A0

Matrix-Signalprozessor zur Auswertung der Photodiodensignale der Laserabtasteinheit (Dreistrahl).

Das IC beinhaltet außerdem:
HF-Verstärker, Fokusfehlerverstärker, Fokussuchschaltung, Fokus-Einschaltung, Spurfehlerverstärker, Spursprungkontrollschaltung, Spur-Komparator (Zero cross), Spur-HF-Komparator, Spurtreiber-Begrenzungsschaltung, Spurservotreiberverstärker, Drehzahltreiberservoverstärker.

XB087A0 is matrix signal processor for reckon of photo to diode signals in the laser pick-up (three beam spot).

This device consists of following:
HF-amplifier, focuserror amplifier, focus search circuit, focus-on-detector, tracking error amplifier, traking jump control circuit, tracking zero-cross comparator, off-track comparator (HF), tracking driver limiter circuit, feed servo driver amplifier, disc servo drive amplifier.

PIN-NR. PIN-NO.	PIN-NAME PIN-NAME	F/A I/O	FUNKTION	FUNCTIONS
1	V_{EE}	E, I	Versorgungsspannung	Supply voltage
2	FEO	A, O	Spurführungsendverstärkerausgang für Spurführungsmotor	Feed motor output
3	FE -	E, I	Spurführungsendverstärkereingang - Eingang	- Input of feed amplifier
4	FE +	E, I	Spurführungsendverstärkereingang + Eingang	+ Input of feed amplifier
5	TWC	E, I	Fensterkomparatoreingang mit Schaltschwelle von ± 0,67 V zur Spurregelungsbegrenzung.	Threshold window comparator with threshold ± 0.67 V for limitation of tracking drive.
6	TDO	A, O	Vorverstärkerausgang für Spurführungsspulensteuerung	Tracking driver output
7	TDi -	E, I	- Vorverstärkereingang für Spurführungsspulensteuerung	Tracking driver input -
8	TDi +	E, I	+ Vorverstärkereingang für Spurführungsspulensteuerung	Tracking driver input +
9	TH	E, I	Spurhalt (Schalter) beim Spursprung	Tracking hold switch
10	TG	E, I	Spurverstärkung (Schalter) beim Spursprung	Tracking driver input +
11	TS	E, I	Spur-aus (Schalter) beim Spursprung	Tracking-off switch
12	TOF		Abschaltung des Spurführungsspulensignales	Tracking off
13	CTH		Höhenabsenkung im Spurführungsspulensignal. Verringerung der Spurnachführungsgeschwindigkeit	Reduction of tracking control speed
15	TPO	A, O	Ausgang des Spurführungsvorverstärkers	Tracking preamplifier output
16	TPI	E, I	- Eingang des Spurführungsvorverstärkers	- Tracking preamplifier input
17	TE	A, O	Ausgang des Spurfehlersignalverstärkers (F-E)	Tracking error signal
18	E	E, I	- Eingang des Spurfehlersignalverstärkers. E-Signal von der E-Photodiode.	E-Signal from photodiode
19	F	E, I	+ Eingang des Spurfehlersignalverstärkers. F-Signal von der F-Photodiode.	F-Signal from photodiode
20	GND 1		Masse	Ground
21	GND 2		Masse, HF	HF-Ground
22	V_{CC}		Versorgungsspannung	Supply voltage
23	AC	E, I	- Eingang des Matrixverstärkers 1 (A + C)-Summensignal von den Photodioden	(A + C)-Signal from photodiodes
24	BD	E, I	- Eingang des Matrixverstärkers 2 (B + D)-Summensignal von den Photodioden	(B + D)-Signal from photodiodes
25	HN		-[(A + C) + (B + D)] Matrixverstärkerausgang und HF-Verstärkereingang (- Eingang)	[(A + C) + (B + D)]- Matrix amplifier output and HF-Preamplifier input (- Input)
26	HF	A, O	[(A + C) + (B + D)] - HF-Verstärkerausgang Signal für EFM-Comparator	[(A + C) + (B + D)] - HF-Amplifier output. Signal for EFM-Comparator

PIN-NR. PIN-NO.	PIN-NAME PIN-NAME	F/A I/O	FUNKTION	FUNCTIONS
27	ED 1	A, O	Hochfrequente Hüllkurvenschwingungen zur Bildung der Fokusierung	Envelope detector 1
28	ED 2	A, O	Niederfrequente Hüllkurvenschwindungen zur Erkennung des Spursprungs	Envelope detector 2
29	HF DET	A, O	HF o.k.-Signal. Bei richtiger Spurführung L-Signal. Bei fehlerhafter Spurführung und Datenfehlern H-Signal. Zuordnung von Pin 28	HF-Detect
30	FRF	A, O	Fokuspunkteinstellsignal	For focuspoint control
31	FE	A, O	[(B + D) - (A + C)]-Signal, Fokusfehlersignal	Focus error signal
32	FPi	E, I	- Eingang des Fokusfehlervorverstärkers	Inverted focus preamplifier input
33	FPO	E, I	+ Eingang des Fokusfehlervorverstärkers	Non-inverted focus preamplifier input
34	FZC	A, O	Fokuspunktsignal bei richtiger Fokusierung	Focus zero cross
35	FCS	E, I	Start der Fokussuche	Focus search start
36	FOF		Zum Unterbrechen der Fokusregelung	Focus servo off switch
37	CFC		Zeitkonstantenanschluß für Fokuspunktsuche	Constant for focus
38	FDi	E, I	- Eingang des Fokustreiberverstärkers	Inverted focus driver input
39	FDO	A, O	Ausgang des Fokustreiberverstärkers	Focus driver output
40	DM +	E, I	+ Eingang des Verstärkers für den CD-Tellermotor	Non-inverted input of disc motor amplifier
41	DM -	E, I	- Eingang des Verstärkers für den CD-Tellermotor	Inverted input of disc motor amplifier
42	DMO	A, O	Ausgang des Verstärkers für den CD-Tellermotor	Output of disc motor amplifier

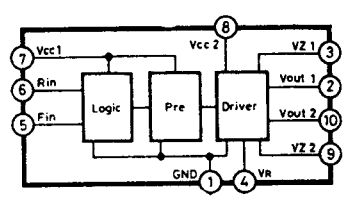
IC202, STC451C

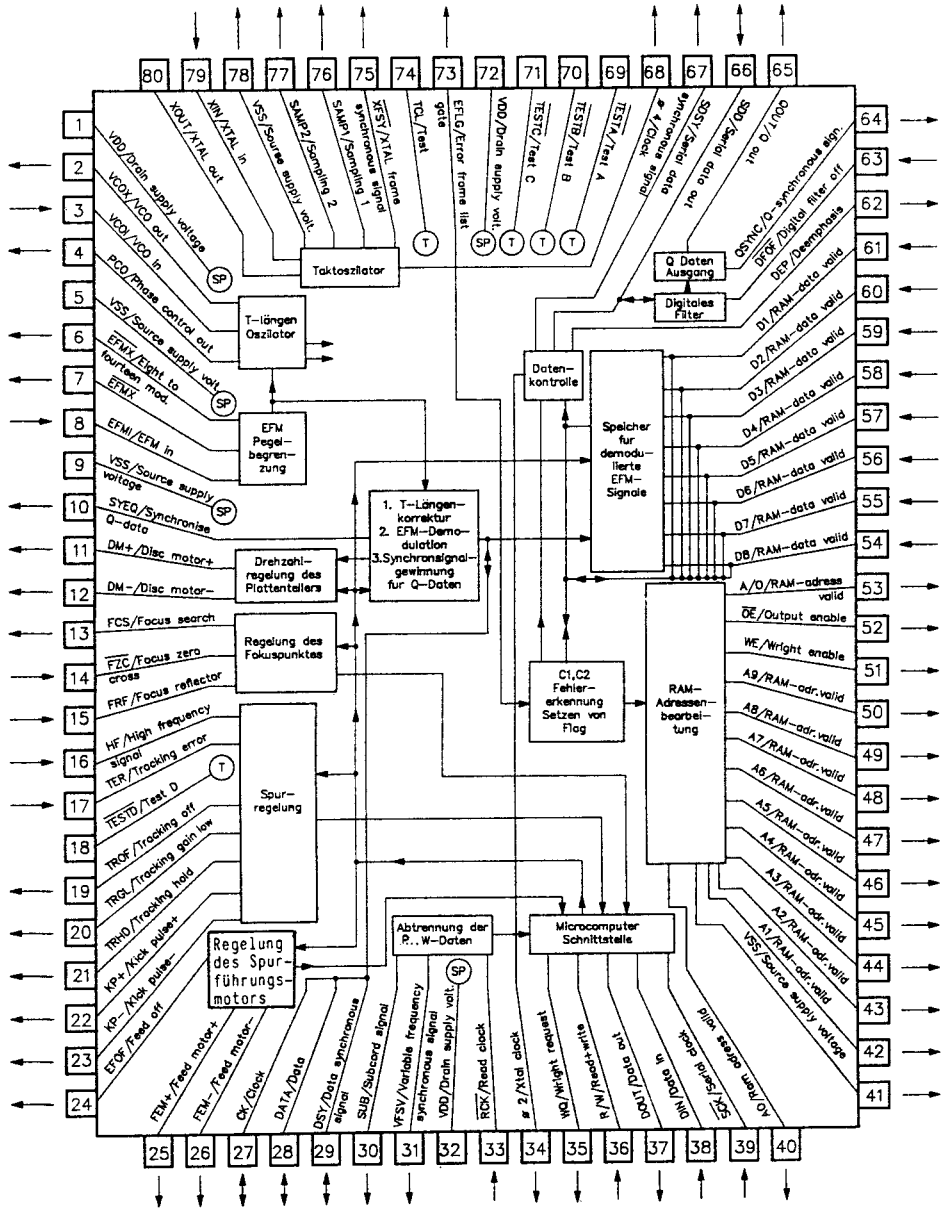
Im Schaltplan 3 eingezeichnet/Printed in circuit diagram 3

IC203, STC451C

Im Schaltplan 3 eingezeichnet/Printed in circuit diagram 3

IC 204, BA6109





IC206, µPC4570HA

In die Schaltung 3 eingezeichnet

Printed in circuit diagram 3

IC207, LC3517 - RAM

Das IC LC3517 ist ein statisches CMOS RAM mit 2.048 Bytes Speichervermögen.

Das IC hat die zwei Steuereingänge $\overline{OE}$ und $\overline{CE}$. $\overline{OE}$ dient dem schnellen Speicherzugriff und $\overline{CE}$ dem Ruhestrommodus.

Da der Stromverbrauch beim Datenerhaltungsmodus und Stand by-Modus gering ist, kann das IC speziell in batteriebetriebenen, tragbaren Geräten eingesetzt werden.

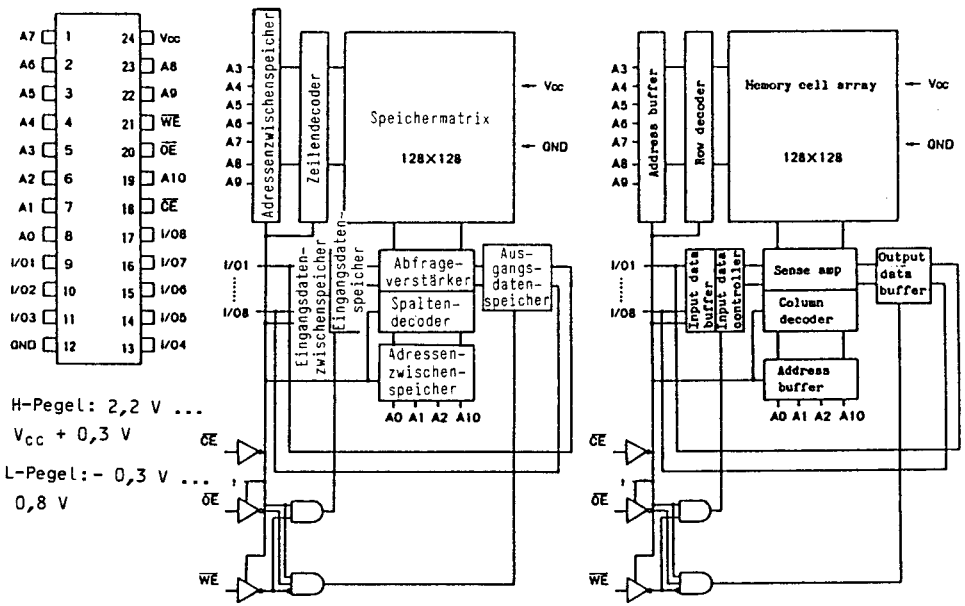
LC3517AML hat bei 60° C einen maximal garantierten Stand by-Strom von 1 µA.

The LC3517 is static CMOS RAM organized as 2048 words x 8 bits.

IC has the two control signal inputs $\overline{OE}$ and $\overline{CE}$. $\overline{OE}$ is for high-speed memory access and $\overline{CE}$ for low stand-by current mode.

Since the current dissipation is low at data retention mode and stand by-mode, IC is especially suited for use in battery-powered portable systems.

LC3517AML guaranteesa maximum stand by-current of 1 µA at 60° C.



H-Pegel: 2,2 V ... V_{CC} + 0,3 V

L-Pegel: - 0,3 V ... 0,8 V

A0 ... A10	Adresseneingang/Adress input	H-level: 2.2 V ... V_{CC} + 0.3 V
WE	Lese-/schreib-Eingang/Read-/write control input	
OE	Ausgangsfreigabe - Eingang/Output enable - input	L-level: - 0.3 V ... 0.8 V
CE	Chipfreigabe - Eingang/Chip enable input	
I/01 ... I/08	Daten-Ein- und Ausgänge/Data input/output	
V_{CC}/GND	Energieversorgung/Power supply pin	

Modus	Mode	CE	OE	WE	E/A	I/O
Lesezyklus	Read Cycle	L	L	H	Datenausgang	Data output
Schreibzyklus	Write Cycle	L	H od. L	L	Dateneingang	Data input
Ausgangs-abschaltung	Output Disable	L	H	H od. L	Hochohmig	High impedance
Keine Unter-	Non select	H	H od. L	H od. L	Hochohmig	High impedance

IC208, YM-3015 D/A-Konverter

YM-3015 ist ein hochintegrierter CMOS-D/A-Konverter. Eingangsseitig werden seriell 2 x 16 Bits für den linken und rechten Kanal vom YM-3805 übernommen.

YM-3015 is CMOs-LSI D/A-converter. Ingets 2 x 16 bits binary and serial signal from YM-3805.

Pin-Nr. Pin-no.	Pin-Name Pin-name	E/A I/O	Pin-Funktion	Pin-Function
1	V_{DD}		Referenzspannung, positiv	Reference voltage, high-potential
2	V_{SS}		Masse	Low-potential
3	V_{DD}		Energieversorgung	Reference power, high-potential
4	SD	E/I	Serielles, korrigiertes Audiosignal (linker und rechter Kanal)	Serial corrected digital audio signal (left and right channel)
5	CLOCK		4,321 MHz-Takt für Schieberegister und L/R-Zeittakt	
6	FORM	E/I	Eingangsbedingung für binäres Eingangssignal, H-Signal	H = binary input
	Select		Eingangsbedingung für Zweikomplimentär-Eingangssignal, L-Signal	L = 2-complement input
7	SMP2	E/I	Rechter Kanal (R-Takt) x 4 = 176,404 kHz, quarzgenau, L = aktiv	Sampling term for CH2 L = aktiv
8	SMP1	E/I	Linker Kanal (L-Takt) x 4 = 176,404 kHz, quarzgenau, L = aktiv	Sampling term for CH2 L = aktiv
9	ICl	E/I	L = Normalfunktion H = ohne SD-signal - 36 db am Exponential-Teil	Initial dear function
10	CH1	A/O	Konstantstrom/pulslängenmoduliert/Rechter Kanal/Zur Bildung der einzelnen Spannungswerte im Audiosignal	Sample hold analog switch output for CH1
11	CH2	A/O	Konstantstrom/pulslängenmoduliert/Linker Kanal/Zur Bildung der einzelnen Spannungswerte im Audiosignal	Sample hold analog switch output for CH2
12	COM	E/I	Eingang vom Trennverstärker	Common input of analog switch for CH1 and CH2
13	TO BUFF	A/O	Ausgang zum Trennverstärker	To Bufferamplifier input
14	MP	E/I	Zuständig für Analogverschiebung	MP is carried out analog shift
15	RB	A/O	1/2 V_{dd} über Operationsverstärker nach Pin 14 zur hochgenauen D/A-Wandlung.	This terminal go out 1/2 V_{dd}. voltage to high-precision maked internal. This is added pin 14 throuth buffer Op-Amp.